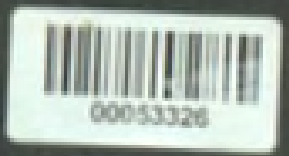
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General Department

To,

Captain T. B. Jervis
Acting Secretary to the Bombay Literary Society

Sir,

I am directed by the Honorable the Governor in Council to present to the Literary Society at Bombay in the name of the Madras Government, the accompanying Copy of the last Volume of Astronomical Observations taken by the Honorable Company's Astronomer at Madras

I have the honor to be
Sir,
Your most Obedient Servant
(Signed) H. Willoughby
Acting Secy to Government

Bombay Castle
15th December 1829

Read at the Meeting on the 27th January 1830.

MADRAS OBSERVATORY

PAPERS.

53326

BY

J. GOLDINGHAM, Astronomer,

and F. R. S.

PRINTED

BY ORDER OF THE

GOVERNMENT OF MADRAS,

in 1826.

MADRAS:

PRINTED AT THE COLLEGE PRESS OF FORT ST. GEORGE.

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OBSERVATIONS

FOR ASCERTAINING

THE LENGTH OF THE PENDULUM AT MADRAS

IN THE EAST INDIES, Latitude 13° 4′ 9″ N.

WITH

THE CONCLUSIONS DRAWN FROM THE SAME.

BY

JOHN GOLDINGHAM, ESQ.

F. R. S.

Read before the Royal Society, January 31, 1822;

AND

First printed in the Philosophical Transactions.

OBSERVATIONS

FOR ASCERTAINING

THE LENGTH OF THE PENDULUM

AT MADRAS.

THE object of the enquiry in this Paper has been considered at all times one of interest and importance, and is particularly so at present, when investigations have been completed in Europe, by order of some of the Governments there; such as, with reference to their accuracy, had never before been made in any quarter of the globe, so far as comes within my recollection. I had seen the details of *Captain Kater's* Experiments in the Philosophical Transactions, and he also did me the favour to send me out a copy of his Paper. The simplicity and accuracy of the Apparatus, induced me to write to that Gentleman, requesting he would have the goodness to order a similar one to be sent to me. This request he not only most readily complied with, but made the Experiments requisite for enabling me to draw the Conclusions; and thence to form the comparison with the Results obtained in Europe. The Apparatus arrived in March, and I immediately set about fixing it; which, notwithstanding the little solid assistance to be obtained in an Operation of this nature from workmen in this country, I was enabled to effect in a most satisfactory manner; and I am led to hope, these observations will not be deemed unworthy the attention of the learned in Europe.

The Clock used in these Experiments has a gridiron Pendulum, the motion being given by a Spring; the maker's name is HARWELL, and the works are of the best description: it was fixed to the north wall of the Observatory, which is of solid masonry two feet in thickness: the Rate was ascertained by comparisons with the Transit Clock each day, at the commencement and conclusion of the Experiments: the transit of the sun before the comparison, and that immediately following, were used in finding this rate; so that four results were obtained from the two comparisons: the Transit Clock, which is an excellent Timekeeper, was regulated by transits of the Sun and Stars; the weather fortunately having been clear, both at noon and at night, during the time the Experiments were making.

The first operation performed was that of making the weight of the Pendulum of the Clock black, and fixing the Disc on the centre. This having been done, five blocks of seasoned teak-wood, each 4 inches in diameter and 7 in length, were prepared; the place above the Clock for the Frame, which was to support the Pendulum, was then marked. This I did with great care and precaution: intersecting lines were drawn upon the wall to shew the exact position of the centres of the blocks and of the screws for fastening the Frame; holes 4 inches in diameter and 10½ in depth, (it being necessary to let the outer part of the blocks 3½ inches within the surface of the wall, to bring the Pendulum of Experiment sufficiently

near the Clock case) were then made in the wall, and the blocks, coated with tar to preserve them from the white ants, were let in and firmly secured. The outer surfaces of the whole, which had previously been made smooth and level, lying in one plane. The Frame, its footpieces being firmly screwed together, was then placed, levelled by means of a spirit level, and fixed to the blocks in the firmest manner; the Frame enclosing the Agates was next put up, levelled, and screwed in its place, the Y's elevated, and the Pendulum hung: the knife edges were then lowered upon the Agates; when I had the satisfaction to find, from the precautions which I had taken, that the Pendulum was most correctly in its place. In this distant part of the globe, there is an anxiety in handling and fixing any new Apparatus which is not left in England, where the maker of it is ready to give assistance, as well as to repair any damage that may chance to have been done: here, little or no assistance can be obtained; and if the use of any part of the Apparatus should be mistaken, and the part forced into a wrong place, the injury may be fatal to the Experiments, as it cannot be repaired here; no small gratification is therefore experienced when an Instrument is firmly secured, uninjured, in its proper position.

The Pendulum is precisely the same, in all its parts, as that used by *Captain Kater* at the different Stations of the Trigonometrical Survey of England, and which he has fully described in the Philosophical Transactions for 1819. Any further description therefore of its construction, will here be unnecessary.

The next operation was to fix the Arc for measuring the Vibrations. The Clock-case was of handsome mahogany enriched with projecting mouldings, with the door in front of plate glass. The mouldings kept the Pendulum at too great a distance from the part of the Case where the Arc could otherwise have been fastened, and it became necessary to have a support in front of the Case. I therefore had a solid Stand of teak-wood made, similar to that for supporting the Telescope, the inner part cut out to the form of the mouldings of the Clock-case, so that it fitted perfectly close to it; in this position it was screwed to the floor; the rods for the supports of the Arc were then let in, and secured to the top of the Stand, and the Arc fixed in its proper place, with reference to the extreme point of the Pendulum. The floor outside of this Apparatus was then separated from the part of the floor which supported it, to prevent any shake by persons moving about within the building.

The small Telescope containing the diaphragm was now fixed upon its Stand, and screwed to the floor at the proper distance from the Pendulum: this was about 9½ feet. The Telescope, and every other part of the Apparatus, have been so fully described by *Captain Kater* in the Paper published in the Philosophical Transactions, that I feel it unnecessary to be more particular here.*

While making the holes in the wall above the Clock for the insertion of the blocks for supporting the Frame, a great deal of dust would necessarily fall upon the Clock-case; every part of the Case where dust could penetrate was therefore filled up with wax, and several folds of cloth were afterwards secured over the whole of the Case, so that it was hardly possible that any dust could penetrate to the Works of the Clock. After the Frame was fixed, the cloth and wax were removed, and fresh oil applied to the Works.

The Clock was then set in motion. This was on the 9th of March, and the Observations commenced two days afterwards.

The following is the mode pursued in making the Observations.

The Pendulum was lifted up from the Y's by myself and an Assistant, and the knife edges wiped with a cloth saturated

* The drawing shows the inside of a part of the Observatory, the Pendulum up, and the adjustment of the diaphragm making, preparatory to commencing the Observations.

with oil. The Pendulum was replaced, and the Y's lowered, till the knife edges rested upon the Agates. The Telescope was then adjusted (care being taken that the O on the Arc of Vibration coincided with the point of the slip), so that the edges of the slip were exactly embraced by the edges of the diaphragm. The height of the Barometer, of the Thermometer fixed near the middle of the Pendulum, and that of the Hygrometer, were taken and registered. The point of the slip at the end of the Pendulum was then brought and kept by the hand to about 1°,3 upon the Arc; and an instant before the Pendulum of the Clock was at its highest point on the same side, the hand was withdrawn, and the Pendulum thereby allowed to vibrate freely. I stationed the head Bramin Assistant* to take down the time, and the youngest Bramin Assistant to count the Clock, which he does with the greatest correctness. Having placed myself at the Telescope, I found there was a sensible portion of time, more or less, as the Arc of Vibration was greater or smaller, between the disappearance of the Disc behind the slip, and its reappearance; I therefore noticed the seconds, and parts of a second, when the Disc disappeared, and also the instant when it again appeared, both which the Bramin put down; the Mean of these I took as the true time of the Coincidence, and registered it accordingly. These times I found could be accurately noted; and it is probable the Mean of the two Observations is generally correct to less than half a second. In this manner the times of the Coincidences were observed. The Thermometer often varying a good deal in a short time, I thought it right to take its height three times, at the third Observation of each set, as well as the first and fifth. The Barometer was observed at the end of each set, as well as at the beginning; and also the Hygrometer, as mentioned above, at the beginning of the Observations, and likewise at the end of those of each day; being desirous of seeing how much the Atmosphere had changed in dryness, as well as in heat and weight; not that this was material, but it is satisfactory to know what change there actually was in the Atmosphere during the time the Observations were making. I now proceed to detail the Observations.

Every Observation taken is here given. As although in this as in similar cases, one feels better pleased with some Observations than with others, yet I do not recollect more than two of these Observations, which I felt dissatisfied with at the time, and that not in a sufficient degree to induce me to think of rejecting them.

The Results, I trust, will prove how unnecessary it would have been to have rejected any of the Observations.

* The name of the head Assistant is *Senavasvachary*, and that of the other *Teroovencutachary*.

OBSERVATIONS.

FIRST SERIES.

March 21th A. M.

Rate of the Clock —0",39.
Hygrometer 11",5 dry.

	Inch.
Barometer	30,085
	30,101
Mean	30,093

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	For Temperature.	Vibrations in 24 hours.
°	h. m. s.	°	°	°			+	+	
81	6 23 44	1,15							
			1, 10	721,25	719,35	86160,42	1,983	4,687	86167,090
	35 45,25	1,05							
			1, 01	722,75	720,75	86160,91	1,671	4,799	86167,331
81,3	47 48	0,97							
			0,935	724	722	86161,33	1,432	4,793	86167,555
	59 59	0,88							
			0,835	723, 8	721, 8	86161,26	1,102	4,814	86167,216
81,4	7 11 55,8	0,79							
81,23	Mean							Rate of the Clock	86167,298
									—,390
									86166,908

Rate of the Clock —0",39

Barometer	30,105
	30,123
Mean	30,114

°	h. m. s.	°	°	°			+	+	
81,5	7 24 50,5	1,13							
			1,065	722, 4	720, 4	86160,80	1,858	4,809	86167,467
	36 52,9	1,00							
			0, 95	725, 7	723, 7	86161,88	1,479	4,915	86168,274
82	48 58,6	0,90							
			0, 87	723,65	721,65	86161,21	1,210	5,152	86167,602
	8 1 2,25	0,84							
			0,795	723,75	721,75	86161,24	1,036	5,300	86167,570
82,7	13 6,0	0,75							
81,73	Mean							Rate of the Clock	86167,729
									—,390
									86167,339

Barometer	30,137
	30,134
Mean	30,135

°	h. m. s.	°	°	°			+	+	
82,9	8 29 26,5	1,15							
			1,10	720, 6	718, 6	86160,20	1,983	5,512	86167,692
	41 27,1	1,05							
			1,00	725, 0	723, 0	86161,66	1,638	5,592	86168,888
83,4	53 32,1	0,95							
			0,91	722,65	720,65	86160,88	1,357	5,765	86167,995
	9 5 34,75	0,87							
			0,83	722,65	720,65	86160,88	1,129	5,956	86167,996
84,3	17 37,4	0,79							
83,53	Mean							Rate of the Clock	86168,135
									—,390
									86167,745

Barometer { 30,139 / 30,140 }

Mean . 30,135

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	For Temperature.	Vibrations in 24 hours.
°	h. m. s.	°	°	'			+	+	
86,5	9 33 39,95	1,11							
			1, 07	719,55	717,55	86159,78	1,876	6,188	86167,844
	43 38,0	1,03							
			0, 99	718,15	716,15	86159,38	1,665	6,920	86167,975
85	57 36,75	0,95							
			0,915	718,75	716,75	86159,58	1,372	6,248	86167,997
	10 9 33,5	0,88							
			0, 84	719, 5	717, 5	86159,83	1,156	6,245	86167,231
83	21 33,0	0,80							
84,83	Mean						Rate of the Clock		86167,432 — ,390
									86167,042

Hygrometer 12, dry

Barometer { 30,140 / 30,142 }

Mean . 30,141

°	h. m. s.	°	°	'			+	+	
84,9	10 20 16,6	1,20							
			1,165	715,65	711,65	86157,56	2,924	6,315	86160,399
	42 10,25	1,13							
			1,085	715,95	713,95	86156,01	1,929	6,532	86166,634
85	54 5,5	1,04							
			1,015	717,0	715, 0	86159,00	1,688	6,345	86167,033
	11 6 2,5	0,99							
			0,945	715,65	713,65	86158,64	1,463	6,315	86166,348
85	17 58,15	0,90							
84,92	Mean						Rate of the Clock		86166,078 — ,390
									86166,218

March 25, A. M.

Clock losing 1',49

Hygrometer 12° dry

Barometer { 30,143 / 30,147 }

Mean . 30,145

°	h. m. s.	°	°	'			+	+	
80,3	0 14 0,75	1,21							
			1,205	717,5	715, 5	86159,16	2,379	4,433	86165,972
	25 57,75	1,17							
			1,150	720,25	718,25	86160,08	2,002	4,681	86166,759
81,0	37 58	1,09							
			1,055	720,5	718, 5	86160,09	1,895	4,674	86166,830
	49 58,5	1,02							
			0,980	722,5	720, 6	86160,88	1,574	4,716	86167,150
81,2	7 2 4,1	0,94							
80,83	Mean						Rate of the Clock		86166,501 — 1,490
									86165,111

Barometer { 30,147 / 30,161 }

Hygrometer 12°¼ dry. Mean - 30,154

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	For Temperature.	Vibrations in 24 hours.
	h. m. s.	°	°	°			+	+	
81,2	7 10 19,5	1,28							
			1, 23	719,1	717,1	86159,70	2,479	4,780	86166,959
	22 18,6	1,18							
			1,125	722	720	86160,66	2,073	4,864	86167,597
81,6	34 20,6	1,07							
			1, 02	723	721	86160,99	1,705	4,949	86167,644
	46 23,6	0,97							
			0, 91	724,5	722,5	86161,49	1,357	5,245	86168,092
82	58 28,1	0,85							
81,6	Mean						Rate of the Clock		86167,573
									— 1,490
									86166,083

March 26, P. M.

Barometer { 30,132 / 30,153 }

Clock losing 1',91 }
Hygrometer 15°,6 dry }

Mean - 30,133

	h. m. s.	°	°	°			+	+	
84	4 58 37,1	1,20							
			1,15	716, 5	714, 5	86158,83	2,167	5,913	86166,910
	10 33,6	1,10							
			1,07	717,85	715,85	86159,28	1,876	5,888	86167,044
83,9	22 31,45	1,04							
			1,01	719,05	717,05	86159,68	1,671	5,857	86167,188
	34 30,5	0,98							
			0,94	720,	718, 0	86160,00	1,448	5,753	86167,201
83,5	46 30,5	0,90							
83,8	Mean						Rate of the Clock		86167,086
									— 1,510
									86165,176

March 26, A. M.

Barometer { 30,119 / 30,150 }

Clock losing 2',08 }
Hygrometer 14°, dry. }

Mean - 30,119

	h. m. s.	°	°	°			+	+	
79,3	5 58 58,1	1,19							
			1, 14	723,27	721,27	86161,08	2,129	3,955	86167,164
	11 1,37	1,09							
			1,045	725,38	723,38	86161,70	1,789	3,997	86167,466
79,5	23 6,75	1,00							
			0,965	723, 5	723, 5	86161,81	1,526	4,048	86167,384
	35 12,25	0,93							
			0, 90	727, 2	725, 2	86162,37	1,327	4,116	86167,813
79,8	47 19,45	0,87							
79,53	Mean						Rate of the Clock		86167,457
									—2,080
									86165,377

Hygrometer 13°,6 dry. Barometer { 30,150 / 30,178 — Mean 30,164

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	For Temperature.	Vibrations in 24 hours.
	h. m. s.	°	°	″			+	+	
79,8	6 56 20,62	1,20							
			1, 24	721,88	719,88	86161,03	2,519	4,264	86168,813
	7 8 32,5	1,19							
			1, 14	721, 0	722, 0	86161,32	2,129	4,486	86167,945
80,9	20 25,5	1,09							
			1,045	724,17	722,17	86161,38	1,789	4,653	86167,822
	32 40,67	1,00							
			0,965	725,33	723,33	86161,76	1,586	4,738	86168,084
81,3	44 46,	0,93							
80,67	Mean						Rate of the Clock		86168,031 −2,080
									86165,951

March 27, P. M. Barometer { 30,116 / 30,131 — Mean 30,123

Clock losing 2″,08 } Hygrometer 20° dry. }

84, 7	h. m. s. 4 13 44,25	° 1,21					+	+	
			1, 20	713,87	713,87	86136,69	2,339	6,176	86167,155
	25 40,12	1,16							
			1, 12	716,51	714,51	86138,83	2,055	6,091	86166,976
84, 3	37 26,63	1,08							
			1,035	717,87	715,87	86140,29	1,765	6,026	86167,070
	49 34, 5	0,99							
			0,955	717,87	715,87	86139,98	1,491	5,965	86166,756
84, 1	5 1 32,37	0,92							
84,37	Mean						Mean of the Clock		86166,900 −2,069
									86164,930

Hygrometer 19°,2 dry. Barometer { 30,131 / 30,097 — Mean 30,109

84,1	h. m. s. 5 10 14,75	° 1,28					+	+	
			1,235	716,50	714,50	86138,83	2,490	5,943	86167,979
	22 11,75	1,19							
			1, 14	718,50	716,50	86139,50	2,129	5,901	86167,530
83,9	34 9,75	1,09							
			1,045	718,87	716,87	86139,62	1,789	5,827	86167,246
	46 8,62	1,00							
			0, 96	720,63	718,63	86140,21	1, 51	5,753	86167,473
83,8+	58 9,25	0,92							
83,83	Mean						Rate of the Clock		86167,380 −2,060
									86165,320

March 29, P. M.

Clock losing 1",46
Hygrometer 17",7 dry

Barometer { 30,084 / 30,113
Mean - 30,098

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	For Temperature.	Vibrations in 24 hours.
	h. m. s.	°	°	°			+	+	
84,5	2 59 8	1,23							
			1,19	719,12	717,12	86159,71	2,320	6,112	86168,142
	3 11 7,12	1,15							
			1,11	720,88	718,88	86160,29	2,019	6,070	86168,380
84,3	23 8,0	1,07							
			1,02	723, 0	721, 0	86160,99	1,705	6,028	86168,723
	35 11,0	0,97							
			0,93	723,63	721,63	86161,20	1,417	5,985	86168,602
84,1	47 14,63	0,89							
84,3	Mean							Rate of the Clock	86168,461
									— 1,460
									86167,004

Hygrometer 17",7 dry.

Barometer { 30,113 / 30,087
Mean - 30,100

	h. m. s.	°	°	°			+	+	
84,1	3 56 44,75	1,26							
			1,215	721, 0	719, 0	86160,33	2,418	5,956	86168,704
	48 45,75	1,17							
			1,115	721,75	719,75	86160,58	2,037	5,930	86168,447
84	20 47,50	1,06							
			1,015	723,62	721,62	86161,20	1,688	5,922	86168,810
	32 51,12	0,97							
			0, 93	723,13	721,13	86161,04	1,417	5,922	86168,379
84	44 54,25	0,89							
84,03	Mean							Rate of the Clock	86168,585
									—1,480
									86167,125

March 30, P. M.

Clock losing 1",96
Hygrometer 16",2 dry.

Barometer { 30,156 / 30,117
Mean - 30,126

°	h. m. s.	°	°	°			+	+	
84,4	2 57 1, 5	1,27							
			1,225	721, 0	719, 0	86160,33	2,459	6,083	86168,872
	3 9 2, 5	1,18							
			1,135	721,25	719,25	86160,42	2,111	6,057	86168,588
84,3	21 3,75	1,09							
			1,045	722, 5	720, 5	86160,83	1,789	6,049	86168,668
	33 6,25	1,00							
			0, 96	723,37	721,37	86161,12	1,510	6,049	86168,679
84,3	45 9,62	0,92							
84,33	Mean							Rate of the Clock	86168,702
									—1,960
									86166,742

Hygrometer 16°,5 dry.

Barometer { 30,117 / 30,115 }

Mean - 30,116

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	For Temperature.	Vibrations in 24 hours.
°	h. m. s.	°	°	°			+	+	
81,3	3 52 18,25	1,24							
			1, 19	720,02	718,62	86160,21	2,320	6,028	86168,558
	4 4 18,87	1,14							
			1,095	722,13	720,13	86160,71	1,965	5,985	86168,660
84,1	16 24	1,05							
			1,005	723,75	721,75	86161,24	1,655	6,008	86168,903
	28 24,75	1,96							
			0,925	723,63	721,63	86161,20	1,402	5,977	86168,579
84	40 38,28	0,89							
84,13	Mean							Rate of the Clock	86168,675
									—1,960
									86166,715

March 30, A. M.

Barometer { 30,124 / 30,144 }

Clock losing 2°,23 }
Hygrometer 13°,7 dry }

Mean - 30,134

°	h. m. s.	°	°	°			+	+	
80,1	6 0 30	1,29							
			1,245	720, 5	718, 5	86160,17	2,559	4,327	86167,036
	12 30,5	1,20							
			1, 16	721,25	719,25	86160,41	2,205	4,433	86167,048
80,6	24 31,75	1,12							
			1, 08	721,87	719,87	86160,62	1,911	4,518	86167,049
	36 33,62	1,04							
			1, 0	723,50	721,50	86161,16	1,639	4,577	86167,376
80,9	48 37,12	0,96							
80,53	Mean							Rate of the Clock	86167,127
									— 2,230
									86164,897

Hygrometer 13°,3 dry.

Barometer { 30,144 / 30,162 }

Mean - 30,153

	h. m. s.	°	°	°			+	+	
81	6 59 7,12	1,19							
			1,145	722,75	720,75	86160,91	2,148	4,695	86167,753
	7 11 9,87	1,10							
			1, 05	723,63	721,63	86161,20	1,806	4,780	86167,786
81,4	23 13, 5	1, 0							
			0,905	724, 0	722, 0	86161,33	1,526	4,843	86167,699
	35 17, 5	0,93							
			0,905	724, 5	722, 5	86161,49	1,341	4,886	86167,717
81,6	47 22, 0	0,88							
81,33	Mean							Rate of the Clock	86167,730
									—2,230
									86165,509

March 31, P. M.

Clock losing 2",24 }
Hygrometer 16",2 dry }

Barometer { 30,07 / 30,056 }
Mean - 30,068

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	For Temperature.	Vibrations in 24 hours.
	h. m. s.	°	°	°			+	+	
85,1	3 8 27, 5	1,24							
			1, 19	718,25	716,25	86159,42	2,320	6,366	86168,106
	20 25,75	1,14							
			1,095	719,37	717,37	86159,78	1,965	6,324	86168,069
84,9	32 25,12	1,05							
			1,005	720,38	718,38	86160,13	1,656	6,273	86168,059
	44 25, 5	0,96							
			0,940	719,75	717,75	86159,92	1,448	6,210	86167,578
84,6	36 25,25	0,88							
84,87	Mean							Rate of the Clock	86167,953
									— 2,240
									86165,713

Hygrometer 16",3 dry.

Barometer { 30,066 / 30,061 }
Mean - 30,064

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	For Temperature.	Vibrations in 24 hours.
	h. m. s.	°	°	°			+	+	
84,6	4 6 55, 5	1,37							
			1,32	716,62	714,62	86159,87	2,855	6,155	86167,880
	18 52,12	1,27							
			1,22	717,75	715,75	86159,24	2,439	6,112	86167, 79
84,4	30 49,87	1,17							
			1,12	720,00	718,00	86160,00	2,055	6,074	86168,129
	42 49,87	1,07							
			1,02	719,75	717,75	86159,67	1,705	6,049	86167,424
84,26	54 49,62	0,97							
84,42	Mean							Rate of the Clock	86167,806
									— 2,240
									86165,566

March 31, P. M.

Clock losing 2",10 }
Hygrometer 14",6 dry. }

Barometer { 30,098 / 30,114 }
Mean - 30,106

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	For Temperature.	Vibrations in 24 hours.
	h. m. s.	°	°	°			+	+	
81,3	5 10 27, 5	1,21							
			1, 17	721, 5	719, 5	86160,50	2,243	4,763	86167,506
	6 11 28, 5	1,13							
			1,095	723,12	721,12	86161,03	1,964	4,733	86167,727
81,15	23 31,62	1,05							
			1,025	723,88	721,88	86161,29	1,721	4,725	86167,736
	35 35, 5	0,99							
			0,955	724,87	722,87	86161,61	1,494	4,750	86167,854
81,25	47 40,37	0,92							
81,23	Mean							Rate of the Clock	86167,706
									—2,100
									86165,606

Hygrometer 15,5 dry. Barometer { 30,114 / 30,130 } Mean . 30,122

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	For Temperature.	Vibrations in 24 hours.
	h. m. s.	°	°	'			+	+	
81,35	6 59 59, 5	1,20							
			1, 16	721,75	720,75	86160,01	2,205	4,922	86167,237
	12 2,25	1,12							
			1, 08	721,37	722,37	86161,45	1,911	4,864	86168,225
81,55	24 6,02	1,04							
			0,995	723,75	723,75	86161,00	1,622	4,911	86168,153
	35 12,77	0,95							
			0, 91	726,63	726,63	86162,19	1,357	5,021	86168,568
81,95	48 19,03	0,87							
81,62	Mean					Rate of the Clock			86168,378 −2,190
									86166,188

April 1, P. M. Barometer { 30,109 / 30,087 } Mean . 30,094

Clock losing 1",85
Hygrometer 10'8 dry.

	h. m. s.	°	°	'			+	+	
85, 3	2 23 30,02	1, 18							
			1,137	717,52	715,52	86159,17	2,118	6,473	86167,761
	35 28,12	1,095							
			1,048	720,13	718,13	86160,04	1,739	6,473	86168,319
85, 3	47 29,25	1,000							
			0, 96	720,75	718,75	86160,25	1,510	6,455	86168,215
	59 29	0, 92							
			0,883	721, 5	719, 5	86160,50	1,278	6,425	86168,203
85,15	3 11 30, 5	0,845							
85,23	Mean					Rate of the Clock			86168,193 −1,850
									86166,973

Hygrometer 10',8 dry. Barometer { 30,087 / 30,083 } Mean . 30,085

	h. m. s.	°	°	'			+	+	
85,15	3 19 30,25	1,27							
			1,21	719,25	717,25	86159,75	2,259	6,404	86168,533
	31 39	1,15							
			1,10	719,62	717,62	86159,87	1,983	6,396	86168,249
85,19	43 29,62	1,05							
			1,01	720,63	718,63	86160,21	1,671	6,383	86168,261
	55 29,25	0,97							
			0,93	721,00	720,00	86160,65	1,417	6,375	86168,452
85,06	4 7 41,25	0,89							
85,10	Mean					Rate of the Clock			86168,379 −1,850
									86166,529

April 1, P. M. Barometer { 30,126 / 30,134

Clock losing 1",86 / Hygrometer 45° dry. } Mean - 30,130

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	For Temperature.	Vibrations in 24 hours.
	h. m. s.	°	°	"			+	+	
81,95	6 16 49,75	1, 19							
			1,145	722,25	720,25	86160,53	2,145	5,114	86168,072
	23 52,0	1, 10							
			1,053	723,13	721,13	86161,04	1,896	5,033	86168,097
82,5	40 55,15	1, 01							
			0,978	723,37	721,37	86161,19	1,567	5,300	86167,057
	52 58,5	0,945							
			0,912	723,62	721,62	86161,09	1,503	5,321	86167,884
82,6	7 5 2,12	0, 88							
82,35	Mean					Rate of the Clock			86168,015 / −1,860 / 86166,155

Hygrometer 45°,8 dry. Barometer { 30,134 / 30,172

Mean - 30,153

82,6	h. m. s. 7 13 17,62	1,105					+	+	
			1,149	722	720	86161,09	2,150	5,252	86168,514
	23 14,62	1, 10							
			1, 05	723,88	721,86	86161,08	1,841	5,410	86168,531
82,85	37 18,5	1, 02							
			0, 98	725,12	723,12	86161,09	1,574	5,444	86168,708
	49 23,62	0, 94							
			0, 89	725,63	723,63	86161,89	1,321	5,469	86168,630
82,95	8 1 29,25	0,853							
82,90	Mean					Rate of the Clock			86168,601 / −1,860 / 86166,741

April 2, P. M. Barometer { 30,125 / 30,137

Clock losing 2",02 / Hygrometer 46°,7 dry. } Mean - 30,131

83,75	h. m. s. 2 52 1,5	1, 23					+	+	
			1, 18	719,62	717,62	86159,87	2,251	6,020	86168,771
	3 4 1,12	1, 13							
			1,085	719,88	717,88	86159,96	1,929	6,333	86168,684
85,25	16 1,0	1, 04							
			0,993	721, 0	719, 0	86160,33	1,616	6,455	86168,401
	28 2	0,945							
			0, 91	720,12	718,12	86160,04	1,357	6,283	86167,780
85,0	40 2,12	0,875							
85,37	Mean					Rate of the Clock			86168,318 / −2,050 / 86166,254

Hygrometer 16,7 dry. Barometer { 30,127 / 30,118 } Mean . 30,123

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	For Temperature.	Vibrations in 24 hours.
°	h. m. s.	°	°	°			+	+	
83	3 46 27,87	1,195							
			1,153	719,88	717,88	86150,56	2,178	6,324	86158,062
	88 27,75	1,110							
			1,059	720,25	718,25	86160,08	1,813	6,282	86168,175
84,8	4 10 28,0	0,995							
			0,938	722,12	720,12	86160,70	1,504	6,260	86168,464
	22 30,12	0, 92							
			0,883	722,03	720,03	86160,08	1,283	6,260	86168,293
84,8	34 32,15	0, 85							
84,87	Mean						Rate of the Clock		86168,331 — 2,090
									86166,241

The Correction for the Arc of Vibration was ascertained by multiplying the Square of the Mean Arc by 1,6385. The Correction for Temperature was found as follows: the Mean of the Thermometer at the beginning and middle of the Observations was taken, and that of the middle and end; which gave five Heights, one for each Observation; the Mean of the first and second, of the second and third, and so on in succession was taken, which gave four Mean Heights: the difference between each of these and 70° was multiplied by 0,122, the part of a Vibration due to each degree of the Thermometer, as furnished by *Captain Kater*, and the required Correction was obtained.

The Rate of the Clock was found as before mentioned. The following shows the daily rate of the Transit Clock, in the interval during which the Observations were taken; and furnishes a satisfactory example of the good performance of this Standard for finding the Rate of the other Clock.

Rate of the Transit Clock.

March 22	.	.	— 0,25	March 29	.	.	+ 0,09
23	.	.	+ 0,13	30	.	.	+ 0,05
24	.	.	— 0,05	31	.	.	— 0,03
25	.	.	+ 0,23	April 1	.	.	+ 0,02
26	.	.	+ 0,10	2	.	.	— 0,08
27	.	.	+ 0,15	3	.	.	+ 0,05
28	.	.	+ 0,20	4	.	.	— 0,04

Table of the Results of the foregoing Experiments.

Day. 1821.	Time of the Experiment.	Mean Height of the Thermometer.	Barometer.	Hygrometer.	Number of Vibrations in 24 hours at the temperature of 70° of Farenheit.
		°	Inch.	dry.	
March 24	A. M.	81,92	30,093		86166,908
		81,72	30,114		86167,339
		83,53	30,135		86168,975
		84,83	30,135	12,05	86167,047
		84,07	30,141		86166,218
25	A. M.	80,93	30,145		86165,111
		81, 0	30,154	12,92	86166,083
26	P. M.	83, 8	30,133		86165,176
	A. M.	79,53	30,149	14, 4	86163,377
		80,67	30,162		86165,971
27	P. M.	84,37	30,193		86164,930
		83,83	30,169	10, 6	86165,320
29	P. M.	84, 2	30,098		86167,004
		84,03	30,100	17, 7	86167,121
30	P. M.	84,33	30,196		86166,742
		84,13	30,116		86166,715
	A. M.	80,53	30,134	14,92	86164,897
		81,33	30,153		86165,509
31	P. M.	84,87	30,093		86165,713
		84,42	30,064	15,15	86165,566
	A. M.	81,32	30,106		86165,606
		81,62	30,122		86166,198
April 1	P. M.	83,93	30,091		86166,973
		83,10	30,083		86166,589
	A. M.	82,35	30,130	15,65	86166,155
		82,80	30,153		86166,741
2	P. M.	85,37	30,131		86166,954
		84,87	30,123	16, 7	86166,841
Mean		83,18	30,181	15,88	86166,108

Second Series of Experiments for ascertaining the Length of the Pendulum at Madras.

Thinking it possible that these Observations might be referred to by future Observers in other parts of the world, and wishing to have as accurate Results as I could obtain, I determined to take a Second Series; having made what I considered some improvement in detaching the Clock and Apparatus from the floor of the building. In this Series, besides Comparisons for the Rate of the Clock used in the Experiments, with the Transit Clock at the time of making the Experiments, Transits of Stars were taken with this Clock for the purpose. The Result of this Series, however, seems to prove, that every necessary precaution had been used in the first; the difference of the two being only 0,06 of a Vibration in 24 hours.*

The following are the Observations of the Second Series.

OBSERVATIONS.

Second Series.

April 18th A. M. Barometer { 30,018 / 30,029 }

Rate of Clock + 0°,07 }
Hygrometer 12°,6 dry. } Mean - 30,025

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	For Temperature.	Vibrations in 24 hours.
	h. m. s.	°	°	°			+	+	
82,7	18 14 21,75	1,275							
			1,122	711,12	709,12	86157,00	2,447	5,402	86164,849
	26 12,87	1, 17							
			1,125	712,63	710,63	86157,52	2,074	5,469	86165,063
83	38 5,50	1, 08							
			1,035	713, 0	711, 0	86157,84	1,755	5,550	86164,945
	49 58,50	0, 99							
			0,953	713,62	711,62	86157,86	1,488	5,643	86164,691
83,45	19 1 52,12	0,915							
									86164,887
83,65	Mean						Rate of the Clock		+ 0,970
									86165,857

Barometer { 30,029 / 30,044 }

Mean - 30,037

	h. m. s.	°	°	°			+	+	
83,45	19 11 27,12	1, 30							
			1, 25	708,63	706,63	86156,15	2,560	5,748	86164,478
	23 15,75	1, 20							
			1,155	711,38	709,38	86157,09	2,186	5,863	86165,539
84,0	35 7,13	1, 11							
			1,067	711,12	709,12	86157,00	1,865	5,985	86164,850
	46 58,25	1,025							
			0,990	712,12	710,12	86157,34	1,606	6,112	86165,058
84,6	58 50,37	0,955							
									86164,981
84,02	Mean						Rate of the Clock		+ ,970
									86165,951

* By rejecting the 4 in each Series, which differ most from the Mean, we obtain a Mean 0,03 of a Vibration less than that from which the Conclusions have been drawn.

Hygrometer 15° dry. Barometer { 30,044 / 30,043 } Mean - 30,044

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	For Temperature.	Vibrations in 24 hours.
	h. m. s.	°	°	″			+	+	
84,6	20 19 1, 5	1, 39							
			1,337	709, 0	707, 0	86156,55	2,909	6,818	86163,859
	24 50, 5	1,285							
			1,233	708,75	706,75	86150,19	2,491	6,303	86164,894
85	29 39,25	1, 18							
			1,128	710, 0	708	86158,66	2,100	6,396	86165,156
	48 53,25	1,085							
			1,042	709,37	707,37	86156,40	1,789	6,502	86164,094
85,5	21 0 18,62	1, 00							
85,04	Mean						Rate of the Clock		86163,958 + ,970
									86164,928

April 15, P. M. Barometer { 29,983 / 29,991 } Mean - 29,972

Rate of Clock 0″,88 } Hygrometer 16°,5 dry }

	h. m. s.	°	°	″			+	+	
87,5	2 21 17,62	1,275							
			1,222	707,50	705,50	86158,76	2,451	7,586	86163,897
	33 5,12	1,170							
			1,118	708,50	706,50	86156,01	2,096	7,356	86165,392
87,35	44 53,62	1,055							
			1,015	710,88	708,88	86157,06	1,688	7,318	86166,060
	56 44, 5	0,975							
			0,933	709,62	707,62	86156,49	1,420	7,276	86165,192
87,15	3 8 34,12	0,890							
87,33	Mean						Rate of the Clock		86165,589 + ,980
									86166,482

Barometer { 29,961 / 29,959 } Mean - 29,960

	h. m. s.	°	°	″			+	+	
87,1	2 17 0,12	1, 20							
			1, 20	708,50	706,50	86156,01	2,359	7,032	86165,401
	28 48,62	1, 14							
			1,093	707,88	705,88	86155,89	1,958	7,170	86165,018
86,9	40 36, 5	1,045							
			1,013	710,62	708,62	86156,85	1,681	7,136	86165,647
	52 27,12	0, 98							
			0,955	710,50	708,50	86156,79	1,432	7,115	86165,597
86,8	4 4 17,62	0, 89							
86,93	Mean						Rate of the Clock		86165,366 + ,980
									86166,346

Hygrometer 16°,3 dry.

Barometer { 29,938 / 29,948

Mean - 29,950

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	For Temperature.	Vibrations in 24 hours.
	h. m. s.	°	°	″			+	+	
86,8	4 11 57,4	1,19							
			1, 14	709,92	707,92	86136,35	2,129	7,064	86165,543
	23 46,62	1,09							
			1,045	710, 0	708, 0	86156,62	1,789	6,079	86165,388
85,4	35 36,62	1,00							
			0,955	711,75	709,75	86157,92	1,491	6,208	86165,619
	47 28,37	0,91							
			0,865	712,25	710,25	86157,29	1,266	6,810	86165,456
86,1	59 20,62	0,82							
86,43	Mean						Rate of the Clock		86165,502 + ,380
									86165,282

April 19, A. M. 15h 27' Astron.

Rate of Clock + 0",70

Hygrometer 13°4 dry.

Barometer { 30,046 / 30,041

Mean - 30,044

	h. m. s.	°	°	″			+	+	
83	17 54 47,62	1, 99							
			1,943	710,25	708,25	86156,705	2,532	5,562	86164,799
	18 6 37,81	1,105							
			1,150	711,50	709, 5	86157,139	2,167	5,689	86164,995
83,6	18 20,37	1,195							
			1,097	711,50	709,50	86157,152	1,865	5,733	86164,750
	30 20,87	1,030							
			0,995	715,63	711,63	86157,843	1,632	5,733	86165,218
83,6	42 14, 5	0, 96							
83,4	Mean						Rate of the Clock		86164,939 +0,709
									86165,639

Barometer { 30,041 / 30,050

Mean - 30,045

	h. m. s.	°	°	″			+	+	
83,6	18 49 21	1,305							
			1,257	709,75	707,75	86156,553	2,589	5,795	86164,917
	19 1 10,75	1, 21							
			1, 16	712,37	710,37	86157,499	2,205	5,850	86165,514
84	13 3,12	1, 11							
			1, 07	711,38	709,38	86157,091	1,876	5,951	86164,918
	24 54, 5	1, 03							
			1, 00	713, 5	711, 5	86157,813	1,638	6,002	86165,453
84,25	36 48	0, 97							
83,95	Mean						Rate of the Clock		86165,300 + ,700
									86165,000

Hygrometer 13°,6 dry. Barometer { 30,010 / 30,036 }

Mean - 30,043

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	For Temperature.	Vibrations in 24 hours.
	h. m. s.	°	°	°			+	+	
84,25	19 44 11, 5	1, 25							
			1, 21	710,25	708,25	86156,705	2,399	6,104	86165,208
	36 1,75	1, 17							
			1,125	711,37	709,37	86157,088	2,074	6,252	86165,414
84,95	29 7 53,12	1, 08							
			1,038	711,50	709,50	86157,132	1,765	6,341	86165,238
	19 44,62	0,995							
			0,958	712,13	710,13	86157,347	1,604	6,370	86165,221
85,1	31 36,75	0,920							
84,77	Mean							Rate of the Clock	86165,270 + ,700
									86165,970

April 29, P. M.

Rate of Clock à 0°,16 } Hygrometer 16°7 dry. } Barometer { 29,008 / 29,982 }

Mean - 29,995

	h. m. s.	°	°	°			+	+	
87,5	2 11 25, 5	1,195							
			1,148	707, 0	705, 0	86155,586	2,159	7,360	86165,105
	23 12, 5	1, 10							
			1,055	708	706	86155,932	1,824	7,278	86165,032
87,1	35 0, 5	1, 01							
			0,975	709,25	707,25	86156,362	1,557	7,233	86165,152
	46 49,75	0, 94							
			0,905	708,75	706,75	86156,190	1,342	7,233	86164,765
87,1	58 58, 5	0, 87							
87,23	Mean							Rate of the Clock	86165,013 + ,460
									86165,473

Barometer { 29,982 / 29,977 }

Mean - 29,979

	h. m. s.	°	°	°			+	+	
87,0	3 5 32,62	1,205							
			1,158	707, 0	705	86155,586	2,197	7,191	86164,974
	17 19,62	1, 11							
			1,065	708,63	706,63	86156,149	1,858	7,191	86165,198
87,0	29 8,25	1, 02							
			0,985	708,75	706,75	86156,190	1,590	7,191	86164,971
	40 57, 0	0, 95							
			0, 92	710,62	708,62	86156,832	1,387	7,191	86165,410
87	52 47,62	0, 89							
87,0	Mean							Rate of the Clock	86165,138 + ,460
									86165,598

Hygrometer 17°,5 dry.

Barometer { 30,030 / 30,032 }

Mean - 30,031

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	For Temperature.	Vibrations in 24 hours.
	h. m. s.	°	°	°			+	+	
86, 9	4 2 37,87	1,19							
			1,145	709,75	707,75	86156,533	2,148	7,140	86165,821
	14 27,62	1,10							
			1, 05	710,88	708,88	86157,061	1,806	7,115	86165,982
86, 8	26 18, 5	1, 0							
			0,955	711,37	709,37	86157,088	1,421	7,085	86165,664
	38 9,87	0,91							
			0,875	712,50	710,50	86157,473	1,255	7,043	86165,771
86, 6	50 2,37	0,84							
86,73	Mean							Rate of the Clock	86165,809 + ,370
									86166,179

April 21, A. M.

Rate of Clock 0°,63 }
Hygrometer 14° dry. }

Barometer { 30,064 / 30,062 }

Mean - 30,063

	h. m. s.	°	°	°			+	+	
83,4	17 15 37	1,305							
			1,255	708,62	706,62	86156,489	2,581	5,681	86164,751
	18 3 25,62	1,205							
			1,159	710,13	708,13	86156,664	2,204	5,702	86164,567
83,5	15 15,75	1,114							
			1,082	711,00	709,00	86156,692	1,918	5,732	86164,342
	27 6,75	1,060							
			1,023	712,12	710,12	86157,344	1,715	5,773	86164,832
83,7	38 58,87	0,985							
83,53	Mean							Rate of the Clock	86164,623 + ,630
									86165,253

Barometer { 30,062 / 30,068 }

Mean - 30,065

	h. m. s.	°	°	°			+	+	
83,7	18 45 38,5	1,205							
			1,157	709,87	707,87	86156,575	2,193	5,808	86164,576
	57 28,37	1,110							
			1,083	711,26	709,26	86157,050	1,922	5,829	86164,801
83,8	19 9 19,63	1,055							
			1,022	711,74	709,74	86157,214	1,711	5,858	86164,783
	21 11,37	0,990							
			0,953	712,50	710,50	86157,473	1,488	5,901	86164,862
84	33 3,87	0,915							
83,83	Mean							Rate of the Clock	86164,755 + ,630
									86165,385

Hygrometer 14° dry.

Barometer { 30,068 / 30,070

Mean - 30,079

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	For Temperature.	Vibrations in 24 hours.
	h. m. s.	°	°	"			+	+	
84,1	19 40 10	1, 19							
			1, 15	709,63	707,63	86156,402	2,167	5,955	86164,644
	51 56,63	1, 11							
			1,005	713,12	711,12	86157,084	1,558	6,019	86165,579
84,3	20 3 36,75	1, 02							
			0, 98	712, 0	710, 0	86157,302	1,374	6,101	86164,591
	15 44,75	0, 94							
			0,905	713,88	711,88	86157,917	1,242	6,269	86165,153
84,8	27 28,63	0, 87							
84,4	Mean						Rate of the Clock		86165,175 + ,030
									86165,805

April 22, P. M. Barometer { 30,059 / 30,059

Rate of Clock + 0",76 }
Hygrometer 18°,4 dry. } Mean - 30,059

87,6	h. m. s. 2 9 20,37	° 1,24	°	"			+	+	
			1,185	708,13	706,13	86155,077	2,201	7,411	86165,689
	21 8,50	1,13							
			1,085	708,37	706,37	86156,059	1,919	7,359	86165,319
87,3	32 56,87	1,04							
			1, 00	709,63	707,63	86156,492	1,638	7,309	86165,439
	44 46,50	0,96							
			0,975	710,87	708,87	86156,917	1,558	7,188	86165,763
87,2	56 37,37	0,89							
87,37	Mean						Rate of the Clock		86165,558 + ,709
									86166,218

Barometer { 30,093 / 30,097

Mean - 30,091

87,2	h. m. s. 2 3 6,37	° 1,23	°	"			+	+	
			1, 17	708,25	706,25	86156,018	2,243	7,308	86165,569
	14 54,62	1,11							
			1,065	709,01	707,01	86156,479	1,858	7,260	86165,283
87,1	26 43,63	1,02							
			0, 98	710,75	708,75	86156,870	1,574	7,201	86165,671
	38 31,38	0,94							
			0,895	711,49	709,49	86157,199	1,312	7,004	86165,655
87	50 25,87	0,85							
87,1	Mean						Rate of the Clock		86165,555 + ,760
									86166,315

Hygrometer 18°,2 dry.

Barometer { 29,977 / 29,977

Mean - 29,977

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	For Temperature.	Vibrations in 24 hours.
	h. m. s.	°	°	°			+	+	
87	4 0 4, 5	1, 30							
			1, 25	707,87	705,87	86155,887	2,560	7,161	86165,608
	11 51,37	1, 20							
			1,155	708	706	86155,932	2,186	7,094	86165,212
86,7	23 39,37	1, 11							
			1,067	709,13	707,13	86156,321	1,865	7,043	86165,229
	35 28, 5	1,025							
			0,993	709,87	707,87	86156,575	1,516	7, 0	86165,091
86,5	47 18,37	0, 96							
86,73	Mean							Rate of the Clock	86165,285 + ,460
									86165,745

April 20, A. M.

Rate of Clock 0°,22 + }
Hygrometer 13°4 dry. }

Barometer { 30,047 / 30,071

Mean - 30,059

	h. m. s.	°	°	°			+	+	
83,3	17 5 11, 5	1,275							
			1,233	711,37	709,37	86157,088	2,491	5,647	86165,226
	18 5 2,87	1, 19							
			1, 15	710,75	708,75	86156,876	2,167	5,689	86164,732
83,5	16 53,62	1, 11							
			1,065	712,13	710,13	86157,347	1,858	5,732	86164,937
	28 45,75	1,020							
			0,990	711,00	709,00	86156,962	1,606	5,774	86164,342
83,7	40 36,75	0, 96							
83,5	Mean							Rate of the Clock	86164,809 +0,220
									86165,029

Barometer { 30,071 / 30,088

Mean - 30,079

	h. m. s.	°	°	°			+	+	
83,7	18 47 47,75	1, 36							
			1, 31	709,37	707,37	86156,403	2,812	5,829	86165,044
	59 37,12	1, 26							
			1,215	710,51	708,51	86156,794	2,418	5,888	86165,100
84	19 11 27,63	1, 17							
			1, 13	711,87	709,87	86157,259	2,092	5,956	86164,842
	23 19, 5	1, 09							
			1,043	713,25	711,25	86157,728	1,782	6,015	86165,525
84,3	35 12,75	0,995							
84,0	Mean							Rate of the Clock	86165,128 + ,022
									86165,150

Hygrometer 13°,4 dry. Barometer { 30,088 / 30,082 }

Mean - 30,085

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	For Temperature.	Vibrations in 24 hours.
	h. m. s.	°	°	"			+	+	
84,35	19 42 28	1, 39							
			1,337	710, 0	708	86156,619	2,929	6,119	86165,669
	54 16	1,293							
			1,232	710, 5	708, 5	86156,790	2,421	6,197	86165,478
84,75	20 6 65	1,180							
			1,135	711,15	709,15	86157,000	2,111	6,281	86165,598
	17 37,63	1,090							
			1,045	713,24	711,24	86157,785	1,789	6,366	86165,860
85,15	29 50,87	1, 00							
84,75	Mean						Rate of the Clock		86165,604 + ,074
									86165,678

April 21, P. M.

Rate of Clock + 0",37

Hygrometer 13°,3 dry.

Barometer { 30,043 / 30,038 }

Mean - 30,040

87,3	h. m. s.	°	°	"			+	+	
	2 7 38, 3	1,275							
			1,220	708, 5	706, 5	86156,104	2,139	7,373	86165,916
	19 22	1,165							
			1,125	709,37	707,37	86156,403	2,066	7,305	86165,774
87,2	31 11,37	1,080							
			1,038	710,93	708,93	86156,705	1,765	7,234	86165,744
	43 1,09	0,995							
			0,953	711,81	709,81	86156,965	1,458	7,219	86165,663
87	54 50,69	0,910							
87,23	Mean						Rate of the Clock		86165,770 + 0,370
									86166,140

Barometer { 30,038 / 30,030 }

Mean - 30,034

87	h. m. s.	°	°	"			+	+	
	2 1 43,13	1, 99							
			1, 93	708,49	706,49	86155,959	2,179	7,191	86165,629
	19 31,62	1, 17							
			1,127	709,88	707,88	86156,584	2,091	7,191	86165,856
87	33 21,50	1,089							
			1,043	711, 0	709, 0	86156,962	1,792	7,183	86165,937
	47 12, 5	1, 00							
			0,953	710,58	708,58	86157,061	1,491	7,161	86165,713
86,9	59 5,38	0, 91							
86,93	Mean						Rate of the Clock		86165,781 + ,370
									86166,151

Hygrometer 17°,5 dry. Barometer { 30,017 / 30,007 } Mean - 30,012

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	For Temperature.	Vibrations in 24 hours.
	h. m. s.	°	°	°			+	+	
87	3 56 31,37	1,11							
			1,085	709,88	707,88	86156,584	1,929	7,170	86165,683
	4 8 21,25	1,03							
			0, 99	711,37	709,37	86157,088	1,606	7,127	86165,821
86,8	20 12,62	0,95							
			0, 91	711,51	709,51	86157,136	1,357	7,106	86165,599
	32 4,13	0,87							
			0, 83	712,75	710,75	86157,558	1,128	7,106	86165,792
86,8	43 56,88	0,79							
86,87	Mean							Rate of the Clock	86165,724 + ,760
									86166,484

April 22, A. M. Barometer { 30,022 / 30,016 } Mean - 30,019

Rate of Clock + 0°,98
Hygrometer 15° dry (beginning.)

	h. m. s.	°	°	°			+	+	
83,2	17 45 46	1,26							
			1, 22	714	712	86157,983	2,439	5,596	86166,018
	57 40	1,18							
			1,135	715,62	713,62	86158,531	2,110	5,617	86166,258
83,3	18 9 35,62	1,09							
			1,045	716,88	714,88	86158,955	1,789	5,626	86166,370
	21 32, 5	1, 0							
			0,965	718, 5	716, 5	86159,498	1,526	5,626	86166,650
83,3	53 31	0,93							
83,27	Mean							Rate of the Clock	86166,324 + ,980
									86167,304

Hygrometer 14°,2 dry (end.) Barometer { 30,016 / 30,040 } Mean - 30,028

	h. m. s.	°	°	°			+	+	
83,4	18 45 3,87	1, 21							
			1, 16	715,63	713,63	86158,534	2,205	5,702	86166,441
	54 59, 5	1,111							
			1,076	717,25	715,25	86159,079	1,897	5,765	86166,741
83,7	19 6 56,75	1, 04							
			1, 00	717,75	715,75	86159,247	1,638	5,829	86166,714
	18 54, 5	0, 96							
			0, 92	718,50	716,50	86159,498	1,387	5,888	86166,773
84	30 53, 0	0, 88							
83,7	Mean							Rate of the Clock	86166,667 + ,980
									86167,647

April 23, P. M. Barometer { 30,017 / 30,008 }

Rate of Clock + 0",99 } Hygrometer 18°,3 dry. } Mean . 30,012

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	For Temperature.	Vibrations in 24 hours.
	h. m. s.	°	°	"			+	+ "	
87,6	2 26 10,19	1,25							
			1, 20	707,50	705,50	86155,750	2,559	7,421	86165,582
	37 57,69	1,15							
			1, 10	709,26	707,26	86156,527	1,983	7,381	86165,891
87,4	49 47,38	1,05							
			1,015	709,12	707,12	86156,317	1,688	7,350	86165,357
	3 1 36, 5	0,98							
			0, 94	710, 5	708, 5	86156,790	1,418	7,326	86165,564
87,3	13 27	0,90							
87,43	Mean						Rate of the Clock		86165,588 + 0, 99
									86166,587

Hygrometer 18°,6 dry. Barometer { 30,008 / 30,000 }

Mean . 30,004

	h. m. s.	°	°	"			+	+	
87,3	3 20 31	1,21							
			1, 16	717,37	715,37	86155,714	2,205	7,397	86165,316
	32 18,37	1,11							
			1, 07	710,00	708,00	86156,619	1,876	7,254	86165,749
87,1	41 08,37	1,03							
			0, 98	709,55	707,38	86156,407	1,571	7,225	86166,143
	55 57,75	0,93							
			0,893	712,12	710,12	86157,344	1,319	7,256	86165,879
87,05	4 7 49,87	0,86							
87,19	Mean						Rate of the Clock		86165,745 + ,990
									86166,735

Table of the Results of the foregoing Experiments.

SECOND SERIES.

Day. 1821.	Time of the Experiment.	Mean Height of the Thermometer.	Mean Height of the Barometer.	Mean Height of the Hygrometer.	Number of Vibrations in 24 hours, at the temperature of 70° of Fahrenheit.
		°	Inch.	dry.	
April 18	A. M.	83,05	30,023		86165,857
		84,02	30,037	15,8	86165,951
		85,04	30,044		86166,029
19	P. M.	87,23	29,972		86166,442
		86,03	29,956	16,5	86166,246
		86,43	29,950		86166,282
	A. M.	83, 4	30,044		86165,639
		83,95	30,045	13,5	86165,900
		84,27	30,043		86165,970
20	P. M.	87,23	29,995		86165,473
		87, 0	29,979	17,1	86165,308
		86,73	29,977		86165,745
	A. M.	83, 3	30,059		86165,029
		84, 0	30,079	15,4	86165,150
		84,23	30,065		86165,096
21	P. M.	87,23	30,049		86166,140
		86,93	30,034	14	86166,151
		86,73	30,031		86166,179
	A. M.	83,53	30,063		86165,955
		83,83	30,065	17,4	86165,385
		84, 4	30,079		86165,805
22	P. M.	87,27	30,038		86166,318
		87, 1	30,021	17,3	86166,315
		86,87	30,019		86166,484
	A. M.	83,27	30,019	14,6	86167,304
		83, 7	30,028		86167,047
23	P. M.	87,43	30,018		86166,578
		87,15	30,004	18,4	86166,735
Mean		85,49	30,036	15,6	86166,048

The Height of the Pendulum above the level of the Sea was 27 feet; the distance in a direct line to the Sea being about 4900 yards, or 2,784 miles. The Country is flat; the nearest elevation being St. Thomas' Mount, which is 9950 yards, or 5,653 miles off, and rises but little above the ordinary level.* There is a range of low Hills a short distance beyond St. Thomas' Mount; and the Pulicat Mountains, which are of considerable elevation, are 20 miles off. The soil about Madras is composed of sand and blue mud, and this to as great depths as the wells have been sunk. I do not recollect any rock having been found. I have therefore used 0,66 as a multiplier to 0,025, the Correction for 27 feet, which gives 0,50 to be added to the number of beats in 24 hours.

The last Correction required was for the buoyancy of the Atmosphere. Having no information relative to the Specific Gravity of the Pendulum, I was obliged to determine it in the best way the limited means this Country afforded. This was done with a Balance at a Dispensary, and with the aid of Mr. Bauer, the Proprietor of the Establishment. The Madras Water drawn from Wells in the Black Town here, and conducted into the Cisterns in the Fort, is considered among the purest in the world. This was boiled, and drained into a tin trough prepared for the purpose; the Pendulum also was securely and properly slung by means of bass wire, with the assistance of Mr. Goonoo, Jeweller, of this place. The Water was at the same temperature with the Atmosphere, and the Experiments were made with every care. It may be unnecessary to detail them here; I shall therefore proceed to the Result, which was as follows:

Thermometer 88°, Barometer 29,961 inches, Specific Gravity of the Pendulum 8,1085. Hence the Specific Gravity of the Pendulum for the mean of the First Series of Observations, the Thermometer being 87,48, and Barometer 30,181, was 8,0995, and the Correction for the buoyancy of the Atmosphere is +6,2075 Vibrations. For the Second Series, the Thermometer having been 87,49, and Barometer 30,258 inches, this Correction is 6,220 Vibrations. These Corrections being applied to the number of Vibrations before found, will give the true number of Vibrations of the Pendulum in 24 hours in vacuo at the level of the Sea, the Thermometer being 70°, and are as follow:—

By the First Series of Observations, 86172,2755. By the Second Series 86172,528. The Mean being 86172,552.

The length of the Seconds Pendulum in London, (Latitude 51° 31' 8",4 N.) at the temperature of 70°, according to Captain Kater, is 39,142213 inches. Now, the Pendulum of Experiment used at Madras, made 86293,44 Vibrations in 24 hours in London, Latitude as before, and 83 feet above the level of the Sea, the Mean Height of the Thermometer being 67°,6, of the Barometer 29,97 inches (vide Appendix). The Correction for the Height above the Sea is 0,29, and that for the buoyancy of the Atmosphere 6,360, both to be added: these Corrections being applied, will give 86300,299 for the number of Vibrations of the Pendulum of Experiment in 24 hours in vacuo at the level of the Sea, the temperature being 70°. Now, $86309,299^2 : 86400^2 :: 39,142213 : 39,252772$ the length of the Pendulum of Experiment.

* About 150 feet above the level of the Sea.

Then 86172,375^2 : 86400^2 : : 39,232772 : 39,0[illegible], the length of the Seconds Pendulum at Madras by the First Series of Observations.

Also, 86172,328^2 : 86400^2 : : 39,232772 : 39,0[illegible]0447, the length of the Seconds Pendulum at Madras by the Second Series.

The Mean of both is 39,0[illegible] inches, being, according to *Sir George Shuckburgh's* scale, the length of the Seconds Pendulum by these Experiments at Madras in Lat. 13° 4' 9",1 N. at the level of the Sea, in vacuo, and at a temperature of 70° of Farenheit.

Then comparing this length with 39,142213 inches, the length in Latitude 51° 31' 8,"4 N. as before stated, the Diminution of Gravity from the Pole to the Equator will be ,0052894, and the Ellipticity $\frac{1}{291,58}$ nearly.

J. GOLDINGHAM.

Madras, May 1821.

APPENDIX.

The following are the Observations made by Captain Kater *in* England, *before the* Pendulum *was sent out.*

July 25, 1820, in Lat. 51° 31′ 8″,4.

Clock losing 1″,20 in a mean Solar day. Barometer 29,83 Inches.

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Vibrations in 24 hours.
°	h. m. s.	°	°				s.	
67,4	1 5 25	1,17						
	32 34	0,97	1,70	1629			1,88	
	59 48	0,84	0,90	1638			1,33	
	2 27 7	0,71	0,77	1639			0,97	
67,8	54 29	0,60	0,65	1642			0,69	
67,6	Mean			1630	1634	86093,18	1,49	86094,10

July 26.

Clock losing 1″,92. Barometer 30,01 inch.

66,9	h. m. s. 1 37 28	1,28						
	2 4 29	1,08	1,18	1621			2,28	
	31 41	0,91	0,99	1639			1,60	
	58 58	0,77	0,84	1637			1,18	
66,8	3 26 14	0,65	0,71	1640			0,83	
66,5	Mean			1634	1638	86093,03	1,47	86094,50

July 27.

Clock losing 1″,15. Barometer 30,01 inches.

67,9	h. m. s. 1 2 27	1,02						
	29 29	1,09	1,12	1622			2,06	
	56 39	0,86	0,94	1630			1,45	
	2 23 59	0,73	0,79	1633			1,09	
67,8	51 10	0,62	0,67	1638			0,75	
67,5	Mean			1630,75	1638,75	86092,89	1,32	86094,21

July 28.

Clock losing 1',55. Barometer 29,91 inches.

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Vibrations in 24 hours.
°	h. m. s.	°	°				s.	
67,8	0 50 41	1,19						
			1,09	1614			1,55	
	1 17 35	1,00						
			0,92	1624			1,29	
	44 29	0,84						
			0,78	1650			1,00	
	2 11 49	0,73						
			0,67	1687			0,73	
68,4	38 56	0,62						
68,1	Mean			1643,75	1631,75	80192,53	1,27	80293,80

July 29.

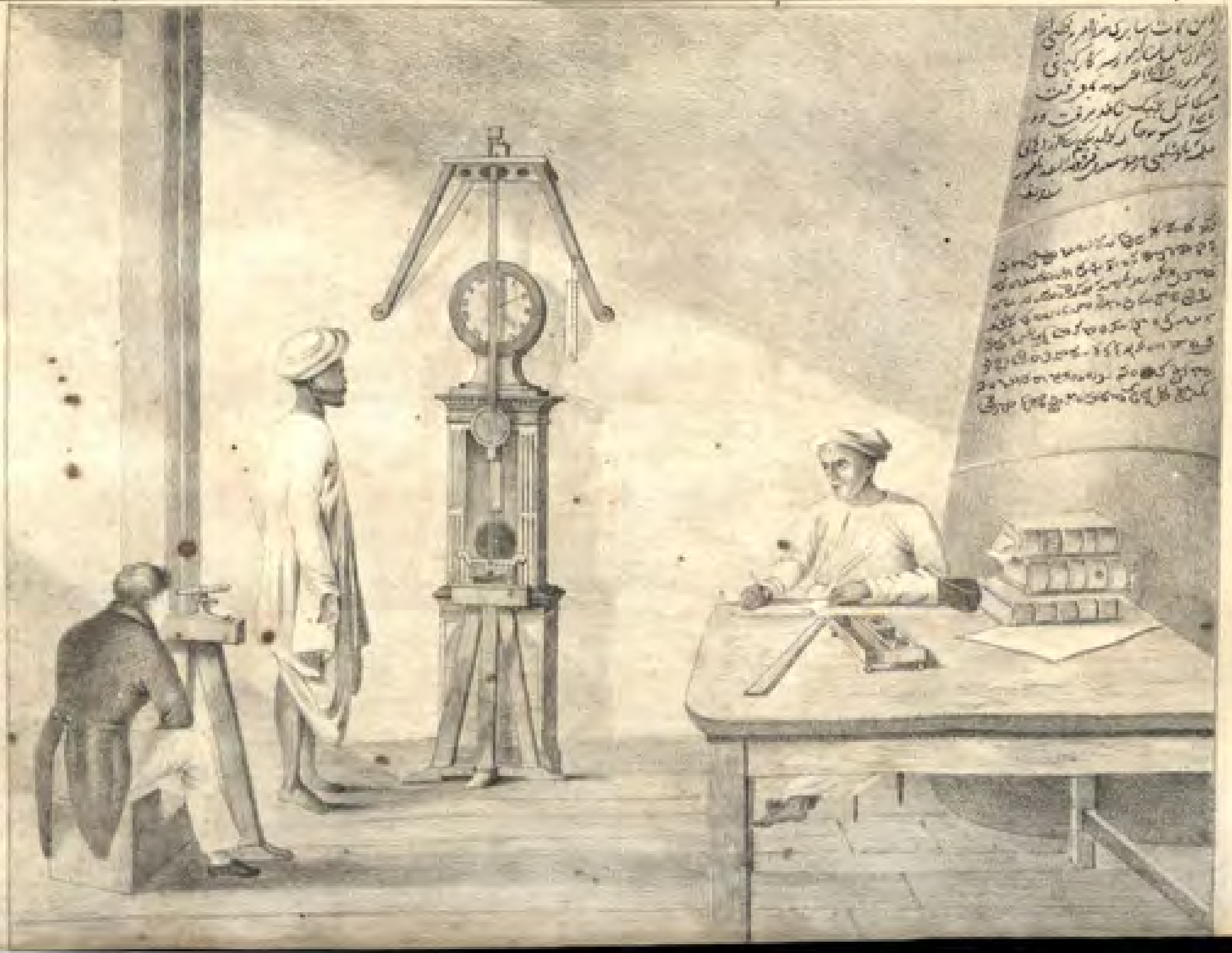
Clock losing 1',07. Barometer, 29,91 inches.

°	h. m. s.	°	°				s.	
67,9	0 47 1	1,21						
			1,11	1615			2,02	
	1 13 57	1,02						
			0,94	1620			1,45	
	40 37	0,86						
			0,79	1625			1,03	
	2 8 2	0,73						
			0,68	1630			0,76	
68,8	35 12	0,63						
68,9	Mean			1622,75	1630,75	80192,45	1,31	80293,76

Vibrations of the Pendulum at London.

Date 1823.	Barometer.	Thermometer.	Vibrations in 24 hours.	Correction for Temperature.	Correct Vibrations in a mean solar day at 70°
	Inch.	°			
July 25	29,83	67,6	86294,40	1,04	86293,36
26	29,91	61,5	86294,50	1,18	86293,32
27	29,91	67,5	86294,91	1,06	86293,85
28	30,01	68,1	86293,50	0,79	86292,71
29	30,01	68,3	86295,76	0,77	86294,99
Mean	29,97	67,6			86293,14

From the above Table it appears, that the Pendulum makes 86293,14 Vibrations in a Mean Solar day, in Latitude 51° 31′ 8″,8 the temperature being 70°, and the height above the level of the Sea 53 feet. The Correction employed for temperature is 0,123 of a Vibration for one degree. In computing the Correction for the buoyancy of the Atmosphere during the Experiments, the temperature of 67°,6 must be used, the Barometer being at 29,97 inches.



OF

THE GEOGRAPHICAL SITUATION OF THE THREE PRESIDENCIES,

CALCUTTA, MADRAS, AND BOMBAY,

IN THE EAST INDIES.

BY

J. GOLDINGHAM, Esq.

F. R. S.

Read before the Royal Society, June 27, 1822;

AND

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OF

THE GEOGRAPHICAL SITUATION OF THE THREE PRESIDENCIES,

CALCUTTA, MADRAS, AND BOMBAY,

IN THE EAST INDIES.

In the present advanced state of knowledge it may be useless to dwell upon the importance to Navigation, as well as to general Geography, of correct information relative to the Latitudes and Longitudes of the Principal Places on the surface of our Globe. The ease with which the situation of a place *on* the Meridian is obtained, for general purposes, is well known, and the comparative difficulty of ascertaining the distance, East or West, *from* a given Meridian is equally so, particularly where that Meridian is a quarter of the Globe distant, which is the case as relates to India and the English First Meridian. Having, however, *one* point correctly determined, the Situations of others, at moderate distances from it, may be come at with greater facility; either by Chronometers, by Correspondent Observations, or, where places are on the same Continent, by actual Survey.

One of the best methods of determining the position of a Point, thus distant from the *First Meridian*, is by *Eclipses of the Satellites of Jupiter*. Correspondent Observations of *Eclipses* of the Sun, of the Moon, or of Occultations, happen but seldom, and the method by the Moon's Transit requires, that the position of that Luminary should be correctly set down in the Tables; or, in the case of Correspondent Transits, that the Instruments at both Places should be accurately placed in the Meridian, and the Transits taken with the least possible error of observation; as only a very small error in the Tables, or in the observed place of the Moon, may produce a considerable one in the Result. But Eclipses of the Satellites of Jupiter occur often, and Correspondent ones with those taken at Greenwich, are not *very* unfrequent, even in this distant part of the Globe. The Observations taken at Greenwich also shew the difference or error of the Tables, and consequently, the error of the Longitude deduced from them. Errors also which may arise from a difference in the powers of the Telescopes, and in the eyes of Observers, as well as from a general difference in the state of the Atmosphere, may be counterbalanced by taking a series of these Eclipses, consisting of Immersions as well as Emersions.

I shall, therefore, for the present at least, as regards *the Longitude of Madras*, draw a Conclusion from these Eclipses; a very long Catalogue of which, has been taken at the *Madras Observatory*. So numerous, indeed, are these Observations, that the Longitude of Madras, which I may give at a future time, by other Methods, may perhaps be considered more as corroborating that now deduced, than as furnishing information for correcting it.

We may now, however, notice a Result obtained from Lunar Observations. Of these, about 800 have been taken at various times since the year 1787, with different Sextants; and being reduced to the Observatory, gives its Longitude 4′ 59″,5 more than by the Satellites. This will furnish us with a Correction for numerous Observations of this description taken at Bombay, when we come to treat of the Longitude of that Place.

The First Set of the following Eclipses is composed of Observations taken at different Places in India; *the differences of Meridian* between which and the Observatory are correctly known—either from Correspondent Eclipses, Chronometers, or by Survey. These having been taken with different Telescopes, and by different Observers, and also at a distance from the Observatory, may be considered as much less valuable than those observed there, with the same description of Telescope, and under every favourable circumstance.

The Second Result is from Eclipses taken at Madras, with different Telescopes, at two or three different points, and reduced to the Observatory. These may also be considered of less value than the third Result, which is deduced from Eclipses taken at the Observatory with the same description of Telescope, and under favourable circumstances. I have, therefore, in drawing the Conclusion, considered a mean of the first and second Results as about equal in value to the third, and have combined them accordingly. The fourth Result is from *Correspondent Eclipses*, which I have considered of equal value with the other three Results. This relates to the *First Series* of Eclipses from 1787 to 1801.

In the *Second Series*, containing Eclipses taken between the years 1803 and 1816, the first Result was deduced from Observations taken at the Observatory with the same description of Telescope, and is therefore of equal value with the Mean of the two first Results, and also with the third of the other Series; and the Results have been combined accordingly. The *Second Result* of the *Second Series* is obtained from *Correspondent Eclipses*; and, like the former, by Observations of this description, is considered of equal value with the Mean of all the Results found by correcting the Tables.* The differences, applied to the Longitude, found by the Tables in the Ephemeris, were obtained by Eclipses taken at Greenwich, as near the time as possible that each Eclipse was observed at Madras.

The following are the Observations and Results. It may be proper to state—that some additional Observations were at first included in these Tables; that a Mean was taken; and, when any Longitude differed more than 30 seconds from the Mean, it was rejected; and it is only those Eclipses which were within 30 seconds of the *general Mean* that are here included. The Observations being so numerous, enabled me to make this Selection. The *general Result* in both instances is, however, very nearly the same—as is commonly the case—the rejected Observations giving Results greater as well as less than the truth—and these often in nearly equal proportions.†

* In drawing the Conclusion, I have combined all the Correspondent Eclipses.

† In finding the Difference of the Tables, reference has been had to the circumstances under which the Greenwich Observation nearest the time was taken, and to its value in consequence; as well as to other Observations taken about the time.

LONGITUDE *of the* MADRAS OBSERVATORY *by the* ECLIPSES *of the* SATELLITES *of* JUPITER, *from* 1787 *to* 1801, *corrected for the difference of the Tables from the Observations taken at* Greenwich, *as it about the time of each Eclipse.*

Day.	Place.	Satellite.	Apparent Time. Observed at Madras.			Apparent Time. By the Ephemeris.			Longitude in Time.			Difference of the Tables.		Corrected Longitude.			Difference of Longitude to the Observatory.		Longitude of the Observatory.		
			h.	m.	s.	h.	m.	s.	h.	m.	s.		m.	s.	h.	m.	s.	m.	s.	h.	m.	s.
1787.																						
Feb. 9	Calcutta.	1 E	8	39	13	2	29	36	5	53	37	+		14	5	53	51	—	22	23,8	5	21	23,8
15		1 E	10	29	26	4	25	34	5	53	52			14	5	54	6		22	23,8	5	21	40,8
22		2 E	8	25	48	2	23	48	5	53	00		1	00	5	54	00		22	23,8	5	21	54,8
23		1 E	6	53	22	1	1	23	5	53	59			14	5	54	13		22	23,8	5	21	47,8
1789.																						
Dec. 17	Ceringa.	1 I	17	6	58,5	11	28	41	5	28	17,5			27	5	28	44,5		8	10,7	5	20	34,8
18		1 I	11	54	23,2	6	6	9	5	28	14,2			28	5	28	42,2		8	10,7	5	20	32,5
20		2 I	13	28	53	8	0	17	5	28	36			12	5	28	48		8	10,7	5	20	38,3
1790.																						
Jan. 9		1 I	15	14	41,4	9	46	0	5	28	32,4			32	5	29	4,4		8	10,7	5	20	44,7
23	Mastlipatam.	2 I	10	15	49	4	51	46	5	24	3			47	5	24	50		3	39,7	5	21	10,3
Feb. 1		1 I	17	4	4	11	40	3	5	24	1			30	5	24	40		3	39,7	5	20	0,3
26		1 E	13	59	46	8	35	24	5	24	22			48	5	25	10		3	39,7	5	21	30,3
1791.																						
Jan. 5	Bombay.	1 I	17	35	54,3	12	40	6	4	55	48,3			30	4	51	18,3	+	29	38,4	5	20	56,7
7		1 I	11	58	2	7	7	42	4	50	20			52	4	50	52		29	38,4	5	20	30,4
Feb. 20		1 I	17	41	35	12	50	52	4	50	43			24	4	51	7		29	38,4	5	20	45,4
22		1 I	12	10	3	7	10	28	4	50	31			28	4	50	57		29	38,4	5	20	33,4
March 1		1 I	14	5	10,5	9	14	43	4	50	27,5			55	4	51	2,5		29	38,4	5	20	40,9
6		1 I	16	0	51,5	11	10	21	4	50	10,5			30	4	50	40,5		29	38,4	5	20	18,9
24		1 E	16	55	26	11	43	39	4	51	47			13	4	52	0		29	38,4	5	21	44,4
April 4		3 E	7	29	20	2	28	16	4	51	14			30	4	51	53		29	38,4	5	21	31,4
11		1 E	9	25	39	4	34	37	4	51	2			34	4	51	36		29	38,4	5	21	14,4
18		1 E	11	22	31	6	30	47	4	51	44			30,5	4	52	20,5		29	38,4	5	21	58,7
25		1 E	13	17	51,2	8	26	45	4	51	6,2			43	4	51	49,2		29	38,4	5	21	27,6
27		1 E	7	46	41,2	2	55	41	4	51	0,2			43	4	51	43,2		29	38,4	5	21	21,6
May 27		1 E	9	54	2,5	5	3	18	4	50	44,5			51	4	51	35,5		29	38,4	5	21	14,6
1789.																						
Jan. 29	Tranquebar.	2 E	14	21	19	9	1	26	5	19	44	—		18	5	19	27		1	34	5	21	6
31		1 E	10	40	54	5	22	5	5	18	49	+1		16	5	19	59		1	34	5	21	25
Feb. 14		1 E	14	29	56	9	10	25	5	19	31			12,5	5	19	43,5		1	34	5	21	17,5
23		1 E	10	54	17	5	34	30	5	19	47			12,5	5	19	53,5		1	34	5	21	27,5
May 28		1 E	6	33	4	1	13	20	5	19	44			20	5	20	4		1	34	5	21	25
1790.																						
Jan. 27		2 I	10	10	19	4	51	46	5	18	33		1	6	5	19	39		1	34	5	21	6
25		1 I	15	5	58	9	47	23	5	18	29			59	5	19	7		1	34	5	20	41
30		2 I	12	43	29	7	25	39	5	17	50		1	0	5	18	50		1	34	5	20	30
1787.																						
Nov. 19	Madras.	2 I	8	18	54	2	58	8	5	20	46		1	7	5	21	53	—		1,2	5	21	51,8
Dec. 21		2 E	10	25	37	5	14	3	5	21	34		1	37	5	21	37			1,2	5	21	35,8
28		2 E	13	10	19	7	48	32	5	21	36			37	5	21	14			1,2	5	21	9,8
1788.																						
Jan. 27		1 E	13	1	14	7	41	6	5	20	8	+		30	5	20	38			1,2	5	20	36,8
Feb. 19		1 E	11	17	3	5	55	43	5	20	20			50	5	21	10			1,2	5	21	8,8
23		2 E	10	1	56	4	42	0	5	19	56		1	14	5	21	10			1,2	5	21	8,8
March 22		1 E	10	1	47,8	4	40	53	5	20	54,8			18	5	21	6,8			1,2	5	21	5,6
31		1 E	6	28	46,0	1	7	54	5	20	50,0			18	5	21	2,0			1,2	5	21	1
April 23		1 E	6	49	43,5	1	28	48	5	20	55,5	—		3	5	20	58,5			1,2	5	20	51,3
Nov. 5		1 I	13	44	47,1	10	21	20	5	20	27,1	+		30	5	21	19,1			5,4	5	21	13,7
14		1 I	12	5	20,5	6	45	9	5	20	20,5			32	5	21	22,5			5,4	5	21	16,9
22		1 I	13	48	47,6	10	28	10	5	20	37,6		1	0	5	21	37,6			5,4	5	21	32,2
30		1 I	10	19	37,8	4	55	52	5	20	45,8		1	0	5	21	45,8			5,4	5	21	40,4
1789.																						
April 3		1 E	9	37	3	4	16	27	5	20	36			27	5	21	3			1	5	21	2
10		1 E	9	56	17,6	4	35	36	5	20	41,6			39	5	21	1,6			1,2	5	21	0,4
1790.																						
Jan. 25		1 I	13	7	51,7	7	47	23	5	20	28,7			58	5	21	6,7			0,4	5	20	57,3
30		2 I	12	46	18,1	7	23	30	5	20	50,1		1	6	5	21	44,1			0,4	5	21	33,7
Feb. 3		1 I	11	28	48,9	6	8	10	5	20	20,9			40	5	21	0,9			1,2	5	21	8,7
10		1 I	13	22	15,3	8	1	58	5	20	15,3			40	5	20	55,3			1,2	5	20	54,1
25		1 E	13	55	29	8	33	24	5	20	5			48	5	20	53			1,2	5	20	51,8
28		1 E	8	24	23,2	2	4	17	5	20	6,2			48	5	20	54,2			1,2	5	20	53
March 14		1 E	12	16	30,5	6	56	19	5	20	11,5			38	5	20	52,5			1,2	5	20	51,1
21		1 E	14	13	00	8	52	45	5	20	15			58	5	21	7			1,2	5	21	5,8
April 6		1 E	12	35	42,8	7	15	20	5	20	22,8			48	5	21	10,8			1,2	5	21	9,6
8		1 E	7	4	20,9	1	44	27	5	20	5,9			48	5	20	53,9			1,2	5	20	52,7

Day.	Place.	Satellites.	Apparent Time. Observed at Madras.	Apparent Time. By the Ephemeris.	Longitude in Time.	Difference of the Tables.	Corrected Longitude.	Difference of Longitude in the Observatory.	Longitude of the Observatory.
1790.			h. m. s.	h. m. s.	h. m. s.	m. s.	h. m. s.	s.	h. m. s.
April 15	Madras.	1 E	9 0 55,4	3 40 50	5 20 5,4	+ 49	5 20 54,4	— 1,2	5 20 53,2
22	—	1 E	10 57 13,4	5 36 58	5 20 15,4	49	5 21 4,4	1,2	5 21 3,2
1792.									
March 19	—	1 I	15 46 24,3	10 25 55	5 20 29,3	54	5 21 23,3	+ 0,2	5 21 23,5
21	—	1 I	10 15 37	4 54 57	5 20 40	54	5 21 34	0,2	5 21 34,2
28	—	1 I	12 11 21,2	6 51 7	5 20 14,2	48	5 21 2,2	0,2	5 21 2,4
May 13	—	1 E	14 52 5,5	9 31 40	5 20 25,5	30	5 20 55,5	0,2	5 20 55,7

The Coringa, Masulipatam, and Tranquebar Observations were taken by the late Mr. Topping: the Calcutta Observations also by the late Mr. Topping: the Bombay Observations by myself.

At the MADRAS OBSERVATORY.

Day.	Satellites.	Apparent Time. Observed at Madras.	Apparent Time. By the Ephemeris.	Longitude in Time.	Difference of the Tables.	Corrected Longitude.
1793.		h. m. s.	h. m. s.	h. m. s.	m. s.	h. m. s.
March 24	1 I	13 7 11	7 46 44	5 20 27	+ 21	5 20 51
31	1 I	15 2 57	9 42 32	5 20 25	24	5 20 49
April 7	1 I	16 58 46,4	11 38 19	5 20 27,4	50	5 21 17,4
9	1 I	11 27 22,9	6 7 16	5 20 6,9	50	5 20 56,9
16	1 I	13 3 29,7	8 2 58	5 20 31,7	50	5 21 21,7
May 1	2 I	13 12 46,2	7 53 9	5 19 37,2	1 34	5 21 11,2

In the Madras Observations which follow, sometimes three Observers have taken the Eclipse, sometimes two; but all the Telescopes have the same Power, and are exactly of the same Construction—having been made by Dollond at one and the same time.

The two Assistants at the Observatory are *Brantias*: the head Assistant is named Senvassachary, and the second Verdachary.

ECLIPSES *from* 1794 *to* 1801, *with the same description of* TELESCOPE.

Day.	Place.	Satellites.	Apparent Time. Observed at Madras.			Apparent Time. By the Ephemeris.			Longitude in Time.			Difference of the Tables.		Longitude of the Observatory.		
			h.	m.	s.	h.	m.	s.	h.	m.	s.		m. s.	h.	m.	s.
1794.	Madras															
May 5	Observatory.	I I	14	38	47	9	18	55	5	19	54	+	48	5	20	42
12		I I	16	53	14,3	11	13	2	5	20	12,3		1 14	5	21	26,3
21		I I	12	55	28,5	7	35	11	5	20	13,5		1 14	5	21	27,5
28		I I	14	48	46	9	18	37	5	20	19		1 16	5	21	35
29		I I	9	16	30,6	3	56	54	5	19	45,6		1 16	5	21	1,6
June 4		I I	16	41	41,3	11	21	41	5	19	57,3		1 18	5	21	15,3
6		I I	11	9	53	5	49	59	5	19	54		1 18	5	21	12
10		2 I	16	59	37	11	39	39	5	20	11		1 2	5	21	13
1795.																
Sept. 4		I E	9	57	44,5	4	37	10	5	20	34,5		17	5	20	51,5
11		I E	11	55	37,5	6	35	11	5	20	20,5		20,6	5	20	59,1
1796.																
July 29		I I	10	39	14,9	5	9	28	5	20	46,9		20,4	5	21	7,3
29		I I	12	24	15	7	3	33	5	20	42		20	5	21	2
Sept. 13		I E	13	14	3,6	9	53	8	5	20	55,6		10,2	5	21	5,8
1797.																
Oct. 18		I E	15	27	59,5	10	7	7	5	20	52,5		20,9	5	21	32,4
20		I E	9	56	39,3	4	20	9	5	20	20,3		40	5	21	10,3
Nov. 5		I E	13	47	55,7	8	37	20	5	20	35,7		57,7	5	21	13,4
5		I E	8	16	26,7	2	56	6	5	20	20,7		41,4	5	21	2,1
19		I E	10	11	18,3	4	50	49	5	20	23,3		43,2	5	21	16,5
1798.																
Jan. 29		I E	6	56	37,3	1	35	51	5	20	46,3		14,6	5	21	0,9
Feb. 21		I E	7	13	4,8	1	32	21	5	20	43,8		8,1	5	20	51,9
Oct. 7		I I	13	1	48	7	40	24	5	21	24		16	5	21	8
16		I I	9	26	18,3	4	4	53	5	21	19,3		19,3	5	21	0,8
—		2 I	11	29	32	6	8	50	5	20	42		3,4	5	20	45,4
23		I I	11	21	24,2	6	0	2	5	21	22,2	—	15	5	21	7,2
30		I I	13	15	57,8	7	54	41	5	21	16,8		17	5	20	59,8
Nov. 17		I E	8	7	14	2	40	45	5	20	29	+	55	5	21	4
—		2 E	13	45	17,8	8	22	26	5	22	51,8	—1	18	5	21	33,8
Dec. 12		2 E	10	47	12,5	5	25	34	5	21	38,5		20,9	5	21	17,6
1799.																
Jan. 16		I E	12	1	19,6	6	40	36	5	20	43,6	+	36	5	21	19,6
18		I E	6	29	13,2	1	8	36	5	20	19,2		55	5	20	54,2
25		I E	8	23	10,8	3	2	42	5	20	28,8		30	5	20	58,8
Oct. 3		I I	14	34	57,6	9	14	1	5	20	56,6		8,2	5	21	4,8
10		I I	16	30	18,7	11	9	20	5	20	58,7	—	0,7	5	20	58
Sept. 15		2 I	13	32	42,6	8	14	34	5	21	8,6	+	31	5	21	9,6
1800.																
Feb. 6		I E	8	4	35,5	2	44	8	5	20	27,5		31	5	21	4,5
15		I E	10	0	4,8	4	39	19	5	20	58,8		30	5	21	28,8
March 24		I E	8	42	25	3	21	38	5	20	47		0,0	5	20	47
Nov. 12		I I	16	37	19,2	7	16	37	5	20	42,2		36,6	5	21	18,8

CORRESPONDENT ECLIPSES *of the* SATELLITES *of* JUPITER, *from the year* 1787 *to* 1800.

Day.	Place.	Satellite.	Apparent Time. Observed Place.			Apparent Time. At Greenwich.			Longitude in Time.			Difference of Longitude to the Observatory.		Longitude of the Observatory.		
1787.			h.	m.	s.	h.	m.	s.	h.	m.	s.	m.	s.	h.	m.	s.
Dec. 21	Madras.	2 E	10	35	57	5	14	30	5	21	27	—	1,2	5	21	25,8
1789.																
Dec. 19	Coringa.	1 I	17	6	38,5	11	38	14	5	28	44,5	8	21,7	5	20	22,8
1790.																
Jan. 25	Madras.	1 I	15	7	51,7	9	46	45	5	21	6,7		1,2	5	21	5,5
Feb. 26	Masulipatam.	1 E	13	59	46	8	34	36	5	25	10	3	39,7	5	21	30,3
March 3	Madras.	2 E	15	30	25,7	9	58	41	5	21	44,7		1,2	5	21	43,5
8	——	3 E	12	27	45,5	7	6	39	5	21	6,5		1,2	5	21	5,3
21	——	1 E	14	13	00	8	51	53	5	21	7		1,2	5	21	5,8
1791.																
March 1	Bombay.	1 I	14	5	10,5	9	14	8	4	51	2,5	+29	38,3	5	20	40,8
—	——	3 I	15	22	12	10	31	15	4	50	57	29	38,3	5	20	35,3
24	——	1 E	16	35	20	11	43	20	4	52	6	29	38,3	5	21	44,3
April 25	——	1 E	13	17	51,2	8	26	2	4	51	49,2	29	38,3	5	21	27,5
1792.																
March 19	Madras.	1 I	15	46	24,3	10	25	19	5	21	5,3			5	21	5,3
April 11	——	1 I	16	3	35	10	42	35	5	21	00			5	21	00
1793.																
May 8	Masulipatam.	2 I	15	50	11,4	10	25	36	5	24	35,4	— 3	39,7	5	20	55,7
1794.																
June 10	Madras Observatory.	2 I	16	52	57	11	31	24						5	21	13
1796.																
Sept. 13	——	1 E	15	14	3,6	9	52	57,8						5	21	5,8
1797.																
Oct. 18	——	1 E	15	27	59,5	10	6	25						5	21	34,5
1798.																
Nov. 15	——	1 E	13	39	55,5	8	17	53,1						5	22	2,4
Dec. 12	——	2 E	10	47	12,5	5	25	54,8						5	21	17,7
1799.																
Jan. 16	——	1 E	12	1	19,6	6	40	0,2						5	21	19,4
Oct. 10	——	1 I	16	30	18,7	11	9	26,7						5	20	52

RESULTS

By the First and Second Satellites, observed at different Places in India, but reduced to the Madras Observatory.

Immersions.			Emersions.		
h.	m.	s.	h.	m.	s.
5	20	24, 8	5	21	25, 8
	20	27, 5		21	44, 8
	20	28, 3		21	54, 8
	20	34, 7		21	47, 8
	21	11, 7		20	31, 7
	21	1, 7		21	44, 4
	20	56, 7		21	31, 4
	20	30, 4		21	14, 4
	20	41, 4		21	55, 7
	20	55, 4		21	27, 6
	20	40, 9		21	21, 6
	20	18, 9		21	18, 2
	21	6, 0		21	0, 0
	20	41, 6		21	35, 0
	20	39, 0		21	17, 5
				21	27, 5
				21	28, 9
5	20	41,23		21	31,48
				20	41,32
			Mean	5	21 6,35 E

RESULTS.

First and Second Satellites observed at Madras.

Immersions.			Emersions.		
h.	m.	s.	h.	m.	s.
5	21	51, 8	5	21	25, 8
	21	13, 7		21	9, 8
	21	16, 9		20	56, 8
	21	32, 2		21	8, 8
	21	40, 4		21	8, 8
	20	57, 3		21	5, 0
	21	35, 7		21	1, 0
	21	8, 7		20	51, 3
	20	54, 1		21	2, 0
	21	23, 5		20	0, 4
	21	34, 2		20	51, 8
	21	2, 4		20	55, 0
	20	51, 0		20	51, 1
	20	49, 0		20	5, 8
	21	17, 4		21	9, 6
	20	56, 9		20	50, 7
	20	21, 7		20	53, 9
	21	11, 2		21	3, 2
				20	55, 7
5	21	15,45	5	21	1,39
				21	15,45
			Mean	5	21 8,42

RESULTS

By Eclipses from 1796 to 1801. First and Second Satellites observed at Madras, with the same Telescope.

Immersions.			Emersions.		
h.	m.	s.	h.	m.	s.
5	20	49, 0	5	20	51, 5
	21	20, 3		20	50, 1
	21	27, 5		21	5, 8
	21	25, 0		21	32, 4
	21	7, 6		21	10, 3
	21	15, 3		21	13, 4
	21	18, 0		21	2, 1
	21	13, 0		21	14, 5
	21	7, 5		21	0, 9
	21	2, 0		20	51, 9
	21	6, 0		21	4, 0
	21	6, 8		21	33, 8
	20	45, 4		21	17, 6
	21	7, 2		21	19, 6
	20	50, 8		20	54, 2
	21	23, 0		20	58, 5
	21	4, 8		21	4, 5
	20	56, 0		21	22, 8
	21	12, 8		20	47, 0
5	21	8,36	5	21	7, 1
				21	8,34
			Mean	5	21 7,74

RESULTS.

Correspondent Eclipses from 1787 to 1800. First, Second, and Third Satellites.

Immersions.			Emersions.		
h.	m.	s.	h.	m.	s.
5	20	59, 8	5	21	25, 8
	21	5, 3		21	30, 3
	20	40, 8		21	43, 5
	20	55, 3		21	5, 3
	21	5, 3		21	5, 8
	21	0, 0		21	44, 3
	20	35, 7		21	27, 3
	21	13, 0		21	5, 8
	21	37, 9		21	34, 5
				22	2, 4
				21	17, 7
				21	15, 4

LONGITUDE *of the* OBSERVATORY *by correcting the* TABLES *from* 1803 *to* 1815.

Date.	Satellites.	Immersions & Emersions.	Mean Time by the National Almanac. h. m. s.	Mean Time observed at Madras. h. m. s.	Longitude of Madras by Tables. h. m. s.	Difference of the Tables. m. s.	Longitude of Madras. h. m. s.
1803.							
Feb. 1	1	Im.	6 1 59	11 93 14,53	5 21 99,43	—0 18,0	5 21 4,4
18	2	Im.	8 3 34	13 97 4,39	5 21 97,39	0 99,0	5 99 59,4
March 15	2	Im.	5 5 33	10 99 55,37	5 21 2,37	0 99,0	5 99 34,4
April 2	2	Em.	2 11 99	7 32 18,48	5 20 50,48	+0 99,0	5 21 99,5
20	1	Em.	5 6 95	10 97 99,30	5 21 7,30	—0 21,0	5 99 46,5
27	1	Em.	7 0 45	12 21 46,80	5 21 1,65	0 21,0	5 99 40,6
May 13	1	Em.	5 18 17	10 39 19,66	5 21 2,66		
20	1	Em.	7 12 47	12 33 58,96	5 21 8,96		
July 7	1	Em.	2 6 1	7 27 20,01	5 21 19,01	+0 6,0	5 21 25,0
1804.							
Jan. 12	1	Im.	6 44 19	14 5 7,60	5 20 48,60		
28	1	Im.	12 31 6	17 15 10,15	5 21 9,15		5 21 6,7
April 29	1	Em.	7 58 54	13 14 13,19	5 21 19,19	0 6,5	5 21 94,7
24	1	Em.	2 21 23	7 42 42,07	5 21 19,07		5 21 24,2
May 1	1	Em.	4 15 41	9 36 40,83	5 20 59,83		5 21 4,7
4	2	Em.	2 45 25	8 6 31,90	5 21 23,10	0 2,5	5 21 23,4
8	1	Em.	6 10 3	11 30 41,90	5 20 38,90		5 99 48,4
1805.							
March 10	1	Im.	8 15 21	13 36 24,63	5 21 3,63		
23	2	Im.	10 53 21	15 55 31,66	5 21 10,66		
24	1	Im.	12 2 36	17 23 23,33	5 20 47,33		
26	1	Im.	6 30 54	11 51 50,00	5 20 56,00		
April 2	1	Im.	8 24 28	13 45 23,56	5 20 55,56		
18	1	Im.	6 40 25	12 1 18,63	5 20 53,63		
25	1	Im.	8 34 21	13 55 11,33	5 20 50,33		
May 4	1	Im.	4 57 0	10 18 17,34	5 21 17,34		
July 21	1	Em.	4 7 25	9 28 4,35	5 20 99,35		
28	1	Em.	6 2 49	11 23 24,26	5 20 42,26		
1806.							
Feb. 18	1	Im.	11 6 42	16 27 24,86	5 20 51,86		
April 14	1	Im.	7 44 31	13 5 0,71	5 20 29,71		
16	2	Im.	9 0 9	14 21 47,09	5 21 38,09		
21	1	Im.	9 37 57	14 58 20,76	5 20 23,76		
May 14	1	Im.	9 47 11	15 7 38,87	5 20 42,87	+0 21,0	5 21 16,9
27	2	Im.	11 6 55	16 28 55,13	5 22 0,13		
Sept. 4	2	Em.	1 40 52	7 7 43,95	5 20 51,95	0 19,0	5 21 3,0
Oct. 6	2	Em.	1 28 30	6 49 16,34	5 20 46,31	—0 21,0	5 21 9,3
1807.							
May 3	1	Im.	9 11 7	14 28 19,06	5 21 19,06		
10	1	Im.	11 4 31	16 25 40,50	5 21 9,50		
26	1	Im.	9 19 47	14 41 3,73	5 21 16,23		
June 9	1	Im.	11 13 22	16 34 39,06	5 21 16,56		
Aug. 11	2	Em.	6 53 31	12 14 41,88	5 21 10,88		5 21 27,4
27	2	Em.	1 21 19	6 42 19, 8	5 20 53,8	+0 15,5	5 21 9,3
30	1	Em.	1 20 20	6 41 8, 6	5 20 48,6	0 15,5	5 21 4,1
Oct. 6	1	Em.	5 27 26	10 48 25, 1	5 20 59,1	0 8,0	5 99 38,1
22	1	Em.	3 48 10	9 9 9,	5 20 59,0	—0 2,1	5 21 48,8
Nov. 7	1	Em.	2 8 59	7 29 40,	5 20 47,0	+0 1,1	5 99 45,4
1808.							
May 21	1	Im.	10 53 26	16 14 46,18	5 21 4,18		
June 13	1	Im.	11 2 31	16 23 43,57	5 21 12,57		
22	2	Im.	12 3 34	17 26 27,67	5 20 53,67		
29	1	Im.	9 18 9	14 39 29,58	5 21 13,58		
Sept. 17	1	Em.	2 57 46	8 18 15,16	5 20 27,16	+0 28,5	5 20 51,7
Oct. 25	1	Em.	1 20 53	6 54 0,83	5 21 7,83	—0 12,0	5 99 55,8
Nov. 9	1	Em.	5 24 37	10 45 29,37	5 21 2,37	. . .	5 21 7,4
1809.							
Aug. 25	1	Im.	9 29 18	14 59 29,31	5 21 4,31	0 19,1	5 99 43,2
Oct. 22	1	Em.	3 1 58	8 23 1,39	5 21 3,39	. . .	5 21 3,3
Nov. 5	1	Em.	6 32 11	12 13 14,46	5 21 5,46	+0 2,0	5 21 5,5
7	1	Em.	1 20 50	6 42 9,04	5 21 4,04	0 3,5	5 21 7,5
14	1	Em.	3 16 19	8 37 22,08	5 21 7,08	0 4,8	5 21 12,3
Dec. 4	2	Em.	5 8 52	10 28 37,25	5 20 15,25	0 30,3	5 21 5,5
7	1	Em.	3 29 10	8 53 9,75	5 20 59,75	0 2,9	5 20 59,9
23	1	Em.	1 19 51	7 14 1,97	5 21 10,97	0 1,3	5 21 11,3
29	2	Em.	2 15 46	7 36 15,90	5 20 99,90		
30	1	Em.	3 48 50	9 10 4,95	5 21 14,95	0 1,0	5 21 15,9

Date.	Satellite.	Immersion or Emersion.	Mean Time by the Nautical Almanac.			Mean Time observed at Madras.			Latitude of Madras by Tables.			Difference of the Tables.		Longitude of Madras.		
			h.	m.	s.	h.	m.	s.	h.	m.	s.	m.	s.	h.	m.	s.
1810.																
Jan. 30	2	Em.	1	58	10	7	18	42,93	5	20	39,93					
March 2	2	Em.	1	39	14	7	0	5,95	5	20	51,95	+0	12,8	5	21	3,7
June 10	2	Im.	11	44	27	17	5	20,07	5	20	53,07					
July 31	1	Im.	11	13	30	16	34	48,95	5	20	58,95					
Oct. 9	1	Im.	6	9	57	11	30	35,63	5	20	58,63	0	6,7	5	20	51,9
Nov. 2	2	Em.	2	15	16	7	35	49,93	5	20	33,93					
28	2	Em.	4	52	56	10	13	17,71	5	20	21,71					
Dec. 3	1	Em.	5	2	44	10	23	31,81	5	20	47,81	0	23,8	5	21	11,6
1811.																
Jan. 4	1	Em.	1	41	2	7	1	30,77	5	20	28,77	1	0,5	5	21	28,8
11	1	Em.	3	56	33	8	57	7,86	5	20	36,86	1	0,3	5	21	35,9
28	2	Em.	1	58	15	7	12	43,19	5	20	39,19	1	6,0	5	21	34,1
31	2	Em.	4	20	15	9	40	19,04	5	20	4,04	1	6,0	5	21	10
Feb. 25	2	Em.	1	37	40	6	57	57,34	5	20	17,34	1	6,0	5	21	23,5
March 29	2	Em.	1	20	10	6	39	58,61	5	19	48,61	1	6,0	5	20	54,6
Oct. 12	1	Im.	9	57	4	14	58	22,09	5	21	18,09	0	2,4	5	21	21,4
Nov. 11	2	Im.	9	44	25	13	0	54,35	5	22	29,35	−0	56,1	5	21	33,3
	1	Im.	11	39	6	17	0	13,28	5	21	9,28			5	21	14,0
Dec. 6	1	Im.	6	16	55	11	37	43,76	5	20	48,76	+0	5,6	5	20	58,3
	2	Im.	6	52	49	12	14	23,57	5	21	24,57					
31	2	Em.	6	46	28	12	7	17,03	5	20	49,03	0	5,6	5	20	58,6
1812.																
Jan. 14	1	Em.	6	56	28	12	17	6,04	5	20	29,04	0	19,0	5	20	47,0
21	1	Em.	8	51	23	14	11	57,31	5	20	51,31	0	24,9	5	20	56,3
Feb. 1	2	Em.	0	35	26	11	55	30,48	5	19	54,48					
8	1	Em.	7	9	59	12	20	33,79	5	20	34,79			5	21	7,2
22	1	Em.	5	29	11	10	49	44,04	5	20	39,04		29,4	5	21	5,4
26	2	Em.	3	47	2	9	7	0,23	5	20	0,23					
March 2	1	Em.	1	53	17	7	13	47,50	5	20	30,50			5	20	47,3
16	1	Em.	5	44	6	11	4	46,49	5	20	40,45		16,8	5	20	57,3
23	1	Em.	2	8	20	7	20	28,86	5	21	2,86			5	21	13,7
Oct. 7	1	Im.	10	57	17	16	19	9,05	5	21	52,05					
30	1	Im.	11	6	0	16	27	5,50	5	21	5,50					
Nov. 4	2	Im.	8	42	5	14	3	30,35	5	21	54,35			5	21	7,7
11	2	Im.	11	16	57	16	38	46,31	5	21	49,31	−0	46,8	5	21	2,5
Dec. 15	1	Im.	11	22	43	16	43	50,24	5	21	7,24			5	21	6,1
17	1	Im.	5	51	3	11	12	0,32	5	21	6,32		1,1	5	21	5,2
31	1	Im.	2	38	4	14	20	12,46	5	21	8,46			5	21	7,4
1813.																
Jan. 2	1	Im.	4	6	20	9	27	13,81	5	20	43,81					
7	2	Im.	8	2	42	13	23	46,07	5	21	4,69					
	1	Im.	11	31	42	16	54	39,75	5	20	54,75					
25	2	Em.	5	27	45	10	48	42,74	5	20	53,74					
Feb. 1	2	Em.	8	4	53	13	25	26,74	5	20	53,74					
10	1	Em.	4	47	35	10	8	36,35	5	21	1,35	+	8,5	5	21	9,8
19	2	Em.	2	38	41	7	57	6,12	5	20	25,1		11,9	5	20	37,0
25	1	Em.	3	5	9	8	25	25,53	5	21	7,5			5	21	16,0
March 5	1	Em.	4	59	53	10	20	37,67	5	20	44,0		8,5	5	20	53,1
12	1	Em.	6	34	34	12	15	27,18	5	20	47,2			5	20	39,7
21	1	Em.	5	17	58	8	30	13,40	5	21	17,4		8,5	5	21	25,9
23	2	Em.	2	26	47	7	47	20,87	5	20	49,87		11,9	5	20	58,8
30	2	Em.	5	4	11	10	23	32,22	5	21	21,2		11,9	5	21	33,1
April 14	2	Im.	2	18	45	7	55	41,45	5	20	56,4		11,9	5	21	8,3
29	1	Em.	1	50	9	7	11	1,16	5	20	59,1		8,5	5	21	0,6
May 22	1	Em.	2	4	2	7	25	22,60	5	21	20,6		8,5	5	21	29,1
30	2	Em.	1	59	5	7	19	57,89	5	20	58,8		11,9	5	21	4,7
Oct. 20	1	Im.	12	14	0	7	55	28,87	5	21	22,4	—	20,9	5	21	1,3
Dec. 20	1	Im.	8	53	23	14	14	50,73	5	21	53,7		23,2	5	21	11,5
1814.																
Jan. 1	2	Im.	0	46	56	12	8	56,48	5	22	0,4		20,8	5	21	0,6
19	1	Im.	10	55	16	15	16	32,23	5	21	16,2		15,6	5	21	0,6
28	1	Im.	7	17	12	12	28	36,01	5	21	24,0			5	21	8,4
Feb. 2	2	Im.	6	23	34	11	45	37,82	5	22	3,8		20,8	5	21	4,3
4	1	Im.	9	10	49	14	31	30,37	5	21	13,3			5	21	22,3
6	1	Im.	3	30	12	9	0	19,08	5	20	58,6	+	12,0	5	21	10,6
13	1	Em.	5	32	36	10	34	6,43	5	21	19,4			5	21	22,4
March 10	1	Em.	2	25	54	7	46	46,85	5	20	52,8		12,0	5	21	4,8
17	1	Em.	4	19	38	9	41	19,77	5	21	18,7			5	21	21,7
24	1	Em.	6	14	0	11	35	30,80	5	21	30,8		12,0	5	21	42,8
31	2	Em.	6	0	27	11	21	8,95	5	20	41,9					
April 2	1	Em.	2	37	1	7	58	20,07	5	21	19,97			5	21	18,4
9	1	Em.	4	31	21	9	53	0,91	5	21	30,9	−	0,6	5	21	30,3

Date.	Satellites.	Immersions or Emersions.	Mean Time by the Nautical Almanac.	Mean Time observed at Madras.	Longitude of Madras by Tables.	Difference of the Tables.	Longitude of Madras.
			h. m. s.	h. m. s.	h. m. s.	m. s.	h. m. s.
1814.							
May 2	1	Em.	4 43 20	10 4 57,03	5 21 21,0	— 0,9	5 21 20,4
	2	Em.	4 49 33	11 10 6,13	5 21 53,0	. .	5 21 52,5
June 10	2	Em.	3 14 32	8 35 10,97	5 20 50,0	0,6	5 20 58,4
Nov. 7	1	Im.	11 49 44	6 30 48,61	5 21 4,9		
1815.							
Jan. 31	1	Im.	10 12 51	15 23 4,95	5 21 13,9		5 20 56,6
Feb. 7	1	Im.	12 5 10	17 23 24,71	5 21 14,7	17,2	5 20 57,4
9	1	Im.	6 23 46	11 54 30,62	5 21 13,8		5 20 56,5
10	2	Im.	10 13 53	15 37 50,49	5 22 6,6	1 0,7	5 20 56,7
25	1	Im.	4 49 10	10 10 28,43	5 21 0,4	17,3	5 20 52,1
28	2	Im.	4 40 48	10 2 46,18	5 22 4,4	1 0,7	5 20 56,7
March 8	1	Im.	6 42 9	12 4 10,25	5 21 10,9	17,3	5 20 56,9
14	2	Im.	9 49 39	15 11 41,31	5 22 2,3	1 0,7	5 20 53,0
April 2	1	Em.	10 57 25	16 19 28,57	5 21 45,9	17,3	5 21 17,9
22	1	Em.	7 29 26	13 42 1,24	5 21 58,5	17,3	5 21 7,9
18	1	Em.	1 49 0	7 10 18,98	5 21 19,9	17,3	5 20 51,8
29	2	Em.	1 18 54	6 40 37,28	5 21 43,2	1 3,0	5 20 40,2
28	1	Em.	5 27 27	10 38 56,61	5 21 27,6	27,6	5 21 0,0
May 5	1	Em.	7 31 45	12 53 26,09	5 21 28,3		5 21 11,11

The Eclipses from 1805 to 1811, were observed during my absence in England; Captain Warren, of His Majesty's 35d Regiment, acting at the Observatory.

By CORRESPONDENT ECLIPSES of the SATELLITES of JUPITER at Madras and Greenwich, from 1805 to 1815.

Date.	Satellites.	Immersions or Emersions.	Mean Time at Madras.	Mean Time at Greenwich.	Longitude.
1810.			h. m. s.	h. m. s.	
Aug. 29	1	Im.	16 44 9,80	11 23 47,5	5 21 15, 3
1811.					
Nov. 20	1	Im.	12 22 6,41	8 0 57,3	5 21 3,11
1812.					
Nov. 23	1	Im.	16 25 23,11	11 14 3,8	5 21 19,61
1813.					
March 19	1	Em.	12 15 21,13	6 54 12,5	5 21 8,6
1814.					
Feb. 4	1	Im.	18 21 50,37	9 10 53,4	5 21 8,97
April 7	2	Em.	13 28 34,63	8 16 6,8	5 21 27,83
1815.					
Feb. 7	1	Im.	17 23 34,74	12 5 37,2	5 20 57,54
March 14	2	Im.	15 11 41,74	9 50 48,7	5 20 53,04
April 3	1	Em.	16 19 28,57	10 58 5,2	5 21 23,37

RESULTS

By the First Satellite.

Immersions.			Emersions.		
h.	m.	s.	h.	m.	s.
5	21	4, 4	5	20	46, 3
	21	6, 7		20	49, 6
	21	16, 9		20	25, 0
	20	45, 2		21	28, 7
	20	51, 9		21	24, 2
	21	21, 4		21	4, 3
	21	14, 9		20	48, 4
	20	56, 3		21	4, 1
	21	6, 1		20	58, 1
	21	5, 2		20	48, 8
	21	7, 4		20	48, 4
	21	1, 5		20	51, 7
	21	11, 5		20	55, 8
	21	6, 6		21	2, 4
	21	8, 4		21	3, 3
	21	99, 3		21	5, 5
	21	10, 6		21	7, 5
	21	22, 8		21	12, 8
	20	56, 6		20	50, 9
	20	57, 4		21	11, 8
	20	55, 3		21	15, 2
	20	52, 1		21	11, 6
	20	59, 9		21	58, 2
				21	55, 2
				20	47, 9
				20	54, 3
				21	7, 2
				21	3, 4
				20	47, 3
				20	57, 3
				21	19, 7
				21	9, 3
				21	16, 0
				20	55, 1
				20	55, 7
				21	25, 0
				21	0, 6
				21	99, 1
				21	4, 8
				21	24, 7
				21	18, 4
				21	30, 3
				21	20, 4
				20	55, 4
				20	17, 9
				21	7, 9
				20	51, 4
				21	2, 0
				21	11, 0
Mean	5	21	3,50	5	21	6,86
				5	21	3,50
				Mean	5	21	5,18

By the Second Satellite.

Immersions.			Emersions.		
h.	m.	s.	h.	m.	s.
5	20	59, 4	5	21	20, 5
	20	34, 4		21	33, 4
	21	33, 3		21	3, 2
	21	7, 7		21	8, 3
	21	2, 5		21	25, 4
	21	0, 6		21	2, 3
	21	4, 3		21	3, 5
	20	56, 7		21	3, 7
	20	54, 7		21	34, 1
	20	53, 0		21	10, 0
				21	23, 3
				20	54, 6
				20	54, 6
				20	37, 0
				20	54, 8
				21	35, 1
				21	8, 3
				21	4, 7
				21	22, 5
				20	40, 2
5	21	0,67	5	21	9,88
			5	21	0,67
			Mean	5	21	5, 3

RESULTS

By the Correspondent Eclipses from 1803 to 1816.

h.	m.	s.
5	21	13,70
	21	3,17
	21	19,04
	21	8,88
	21	5,97
	21	27,83
	20	57,14
	20	53,04
	21	35,37

Correspondent Eclipses from 1787 to 1816.

Immersions.			Emersions.		
h.	m.	s.	h.	m.	s.
5	20	22, 8	5	21	25, 8
	21	5, 5		21	30, 3
	20	43, 8		21	45, 5
	20	23, 3		21	5, 3
	21	5, 3		21	5, 8
	21	0, 0		21	41, 3
	20	55, 7		21	27, 5
	21	15,		21	5, 7
	20	57,		21	34, 5
	21	15, 3		22	2, 4
	21	3,17		21	17, 7
	21	19,04		21	10, 4
	21	5,97		21	8,88
	20	57,83		21	27,83
	20	53,04		21	35,37
5	10	57,66 Mean.	5	21	26,28 Mean
5	21	26,28 Emersions.			
5	21	11,97 Mean.			

LONGITUDE *of the* MADRAS OBSERVATORY *from the whole of the foregoing Observations.*

By Correcting the Tables.

First and Second Satellites.

	h.	m.	s.		h.	m.	s.
Eclipses reduced to Madras,	5	21	6,35				
Observed at Madras, but not with the same Telescope,	5	21	8,41*	Mean	5	21	7,37
Observed at Madras to 1802, with the same description of Telescope,					5	21	7,32
From 1802 to 1815, with Telescopes of the same Powers,					5	21	5,95
Mean *by correcting the Tables,*					5	21	6,78
By Correspondent Observations at Greenwich, from 1787 to 1816,					5	21	11,97
Mean, or Longitude *of the* Observatory,					5	21	9, 4
				East of Greenwich	80	17	91

Fort St. *George* Church-Steeple is 2′ 21″ *East of the Observatory*; *the Longitude of the Steeple* is therefore 80° 19′ 42″ East.

The Longitude by the *Lunar Observations* before alluded to, about 900 in number, taken between the years 1787 and 1792* at different parts of Madras and at Coringa, and reduced to the Observatory, is 80° 20′ 19″,5 East; and therefore, according to the Eclipses, 2′ 53″,5 too great.

* By the late Honourable W. Petrie, Esq. the late Mr. Torrens, and myself; the Coringa Observations by Mr. Torrens.

I shall now proceed to give some information respecting the LATITUDE of the Observatory. The height of the Pole at Madras being only 13 degrees, the method by Circumpolar Stars cannot be used; and the Latitude has been found by Meridian Observations of the Sun and Stars North and South of the Zenith, taken with the Sextant, a Circular Instrument of 18 inches diameter by *Troughton*, and the Zenith Sector used in Colonel *Lambton's* Survey.

The Results were as follow:

				°	′	″
Latitude of the Madras Observatory by Meridian Observations of Stars with the Sextant,				13	4	8,000
With the Circular Instrument, Stars North and South of the Zenith,	13° 4′ 11″,804					
Second set,	13 4 6,720					
				13	4	9,262
Stars near the Zenith,				13	4	7,917
Correspondent Observations of the Sun at Greenwich,				13	4	11,103
Observations of the Sun,				13	4	5,208
Mean by the Circular Instrument and Sextant,				13	4	8,478
By Observations with the Zenith Sector, Stars North and South of the Zenith,	13 4 11, 95					
Sun,	4 5, 15			13	4	8, 55
Mean Latitude by Mr. *Goldingham's* Observations,				13	4	8,313

During my absence in England, I find the Zenith Sector was again brought to the Observatory, there being some doubt, as it would seem, of the correctness of the foregoing conclusion.* The following are the Results of the Observations, which are very numerous.

By Captain *Warren's* Observations with the Zenith Sector.

Latitude, Stars North and South of the Zenith,

Table II. of the Records,	13° 4′ 15″,078					
Table III.	4 15,317					
				°	′	″
Mean by Stars				13	4	14,399
by the Sun					4	5,183
Mean Latitude by Captain *Warren's* Observations				13	4	9,959
Mean Latitude by both; Mr. *Goldingham* with the Circular Instrument and Sextant				13	4	8,479
Zenith Sector, Stars						11,959
Sun						5,159
Captain *Warren's* Zenith Sector,						
Stars						14,595
Sun						5,483
Mean Latitude†				13	4	9,1N.

* Owing, probably, to the difference between the Latitude by the Sun, and that by the Stars; a difference, however, much greater in the latter Observations than in the others; and, as I have observed, not easily accounted for. I hope, however, that the Observatory will be furnished with a large Circle, which, besides enabling us to obtain other valuable information, may lead to a discovery of the cause of this difference.

† This result is found from about 700 Observations.

It would therefore appear that very little (if any) additional light had been thrown upon the subject by the latter Observations; those formerly taken,* differing from the mean of the whole little more than half a second. The mean of the whole, 13° 4′ 9″,1,† may therefore be considered, for the present at least, the Latitude of the Observatory.

It will be observed, that the Meridian Observations of the Sun give a different Result from those of the Stars. In mine, this difference is about 4 seconds less than by the Stars; in the Second Series, the difference is nearly 9 seconds also less than by the Stars; a difference not easily accounted for. It is curious, however, to remark, that the Correspondent Meridian Zenith Distances of the Sun at Greenwich, give a Result greater than the mean Latitude by the Sun 3″,83; and the same Elements are used in both cases, with the exception of Declination.

Of the Longitude‡ of Calcutta.

By a Series of Correspondent Eclipses of the Satellites of Jupiter, taken in Fort William, by the late *Lieutenant Colonel Colebrooke*, of the Bengal Establishment; the Telescope at the Observatory, and that used at Calcutta, being in all respects alike, the difference of Longitude was found to be 8′ 6″ 18″.

Longitude of the Madras Observatory	80°	17′	21″
Calcutta (Fort William) E. of the Observatory	8	6	18
Longitude of Fort William§	88	23	39 E (*a*)

Of the Longitude of Bombay.

In the year 1791, being at Bombay, on my way from England to Madras, and aware that great doubts existed as to the Longitude of that important Commercial Station,‖ I proposed taking some Observations, while detained there for a passage to this Coast, with the view of assisting in the determination of the question; and accordingly commenced observing the Eclipses of the Satellites of Jupiter, and a Series of Lunar Observations; taking also at the same time a sufficient number of Meridian Observations for determining the Latitude. The Results were as follow:

By the mean of about 100 Lunar Observations with a Sextant by *Troughton*, the Longitude of the place of Observation

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* The Observations being so numerous, in the conclusions now drawn from mine, the method of selection used with the Eclipses has been adopted, viz. by taking a mean of the whole, and then rejecting those Results which differ more than the Power of the Instrument would seem to warrant: this, with the Sextant, I have considered 10″, with the Circular Instrument 6″, and with the Zenith Sector 4″. The Latitude formerly deduced stood thus; Mean of the Observations with the Zenith Sector 13° 4′ 9″,55; with the Circular Instrument 13° 4′ 8″,40; with the Circular Instrument and Sextant 13° 4′ 8″,8; Mean 13° 4′ 9″,05 or not one tenth of a second different from the Result now deduced by these Observations.

† Fort St. George Church Steeple is 30″ N. of the Observatory. Latitude of the Steeple is therefore 13° 4′ 42″ N.

‡ According to *Rennell's* Memoir, the Longitude by the Honorable *Thomas Howe*, was 80° 32′; by mean of four Observers, 80° 27′ 45″.

§ The Latitude of Calcutta is considered 22° 35′ N.

‖ *Mr. Howe's* Longitude, 72° 56′, appearing at the time to be considered the most correct; but Captain *Huddart* had placed it more than a quarter of a degree further to the Eastward.

(*a*) The Longitude of *Fort William Flag Staff*, according to that given above, is 88° 23′ 15″ E.

at Bombay was 72° 57′ 30″ E; and by the mean of 150 Lunar Observations with a Sextant, having *Ramsden's* name on it, the Longitude of the place was 72° 57′ 55″. The mean of both was 72° 57′ 42″.

But it would appear from the Lunar Observations taken at Madras, that the Tables about that period gave 0′ 55″,5 too much. If therefore, this quantity be subtracted from the result, the Longitude will be only 72° 56′ 52″ E.

More than 30 Eclipses of the Satellites of Jupiter, Immersions as well as Emersions, were also observed; and by allowing for the difference of the Tables at that period by comparisons with Greenwich Observations, the Longitude of the place of Observations, by the mean of the first and second Satellites, was 72° 53′ 20″.

Also, by a very good Chronometer, the rate of which I found before leaving Bombay, and after my arrival at Madras* (having been about 16 days on the passage), the difference of the Longitude between the place of Observation at Bombay and the Madras Observatory is . . . . . 7° 24′ 12″

This gives for the Longitude of the former . . .	72° 53′ 9″		
The Longitude of Bombay (place of Observation) by the Lunar Observations corrected .	72	54	52
By Eclipses of the Satellites of Jupiter, Tables corrected . . .	72	53	20
By the difference of Longitude by the Chronometer	72	53	9
Mean	72	53	40

But the place of Observation was 54 seconds of a degree West of Bombay Church, and 12 East of the Light House; therefore the Longitude of the Church, by these Observations, is 72° 54′ 42″, and of the Light House, 72° 53′ 30″ East of Greenwich.†

The Latitude was found by 39 Meridian Observations of the Sun and Stars, North and South of the Zenith, taken with the two Sextants, and an Artificial Horizon. The height of the Thermometer and that of the Barometer was noted at the time of each Observation, and the Corrections on this account was applied to the refraction. The Declinations were also corrected for aberration, &c. and the Results were:

By 18 Observations with *Troughton's* Instrument . . .	18°	57′	42″,5
By 18 Observations with *Ramsden's*	18	57	43 ,8
Mean Latitude	18	57	41 N.

The place of Observation was 1′ 27″ North of the Church, and 3′ 19″‡ North of the Light House. The Latitude of the Church is therefore 18° 56′ 7″, and of the Light House 18° 54′ 22″ N.

It may be useful to remark upon a difference with *Ramsden's* Sextant, in the Results by the objects North, and by those South of the Zenith in observing for the Latitude; and also the difference in the Results by the Lunar Observations

* Rate on quitting Bombay + 42″,12
On my arrival at Madras + 40, 24

† The difference of Meridians between Madras and Bombay Churches, according to these deductions, is 7° 24′ 30″.

‡ A Survey with such Instruments as I could obtain was made for ascertaining this, as well as for the difference of Longitude.—*for very accurate purposes this Survey may require Verification with better Instruments.*—The above Results were intended for the use of Navigators.

East and West of the Moon. The Instrument was most carefully examined, and the error regularly found every day by measuring the Sun's diameter; yet, notwithstanding, the following differences were in the Results:

In the Observations for the Latitude, the object being North of the Zenith -	18° 56′ 11″	
South of the Zenith -	18 57 16,6	
Difference*	0 55	
In the Observations for the Longitude, the object being East of the Moon -	77° 19′ 4″,4	
West - -	78 40 46,8	
Difference	24 18,8	

The Sextant by *Troughton*, in the Observations for the Latitude, gave only a difference of four seconds between the Results by the objects North, and those South of the Zenith; and about three minutes in the Observations for the Longitude. Whether the differences in the Results by the other Sextant arose from an error in the total arc, or from what other cause, is not easy to determine. The Instrument appeared perfect; but these Results, however, shew the necessity of observing objects both North and South of the Zenith for the Latitude; and also objects East and West of the Moon for the Longitude. The Mean of the Results thus obtained will be correct; the objects on one side, giving a Longitude as much greater, as those on the other side give one as much less, than the truth. In consequence, we find that the Mean Latitude by *Ramsden's* Instrument is only a few tenths of a second different from that by *Troughton's*; while the Mean Longitude is only about sixteen seconds of a degree different.

J. GOLDINGHAM.

Madras, 6th *December*, 1819.

* From this difference in the Results for the Latitude, a difference of more than half a degree might be looked for in those of the Longitude, as we find to be the case.

OF THE

DIFFERENCE *of* LONGITUDE *found by* CHRONOMETER,

AND BY

CORRESPONDENT ECLIPSES *of the* SATELLITES OF JUPITER;

WITH SOME

SUPPLEMENTARY INFORMATION *relative to* MADRAS, BOMBAY, *and* CANTON;

AS ALSO

THE LATITUDE *and* LONGITUDE *of* POINT DE GALLE *and the* FRIAR'S HOOD.

BY

J. GOLDINGHAM, Esq.

F. R. S.

Read before the Royal Society, June 27, 1822;

AND

First printed in the Philosophical Transactions.

OF

THE DIFFERENCE OF LONGITUDE, &c.

Of the Difference of Longitude found by Chronometer, and by Correspondent Eclipses of the Satellites of Jupiter.

In my former Paper, I mentioned these Methods of finding the Longitude, after the distance of one point from a fixt and distant Meridian had been correctly established, and at the same time carried both into practice; the former, in deducing the Longitude of Bombay, and the latter, in the operation for the Longitude of Calcutta; and I bring forward the following Observations by these methods, to show what may be effected in practice by either, where the Instruments are good, and the necessary precautions have been taken. The Observations at Masulipatam were taken by the late Mr. *Topping*, those at the Observatory, by myself. The Telescopes at both places were the same in construction and magnifying Power.*

Madras Observatory and Masulipatam Flag Staff.

By Correspondent Eclipses of the Satellites of Jupiter.

	Satellites.	Em. or Im.	D. Long to Masulipatam Flag Staff.		
1794	1	E	0′	58″	0″
	1	E	0	48	22,5
1795	2	I	1	0	40,7
	1	I	1	2	0,7
	1	I	0	50	5,2
	2	I	0	46	53,2
	1	I	0	50	45,7
	1	E	0	57	23,2
	2	E	0	50	28,2
	1	E	0	57	17,2
	1	E	0	54	41,2
	2	E	1	1	33,7
Mean	-	-	0	55	14
Observatory		-	80	17	21
Masulipatam Flag Staff		-	81	12	35

* Masulipatam is not two days sail from Madras in the S. W. monsoon.

By Chronometer.	Difference of Meridians.		
By the Chronometers of *Arnold's* in the year 1783 -	0°	55′	43″
In the year 1794, by 2 Chronometers of *Arnold's* -	0	55	00
In the year 1793, by 1 Chronometer of *Arnold's* -	0	53	54
Mean -	0	54	54
Observatory	80	17	21
Longitude of Masulipatam Flag Staff by Chronometer -	81	11	15
Longitude of Masulipatam Flag Staff by the Eclipses -	81	12	33
By the Chronometer - - -	81	12	15
Mean	81	12	24 E

Here we find a wonderful agreement by the two methods; and the Longitude of *Masulipatam*, a point of importance on the Coast, may be considered correctly determined.

The following information may be deemed Supplementary to that given in my former Paper on the Geographical Situation of the three Presidencies, and it is hoped will be found useful to Navigators.

At Madras, the Fort Flag Staff is about 1′ S North, and 2 East of the Church Steeple. This gives for the Latitude of the Flag Staff 13° 4′ 47″ North, and Longitude 80° 19′ 44″ E. As Navigators generally take their departure from the Flag Staff, I have deemed it proper to give its Situation, as well as that of the Steeple, given in the former Paper.

The Tide on the Coast about Madras seldom rises more than 3 feet; and it is high water on the Syzigies at Pulicat, about 20 Miles N. of Madras, by my Observations, at 9ʰ 25ᵐ. The Variation of the Compass towards the end of 1792, on the Coast, about a degree to the Northward of Madras, was 1° 5′ East, by numerous Observations.

At Bombay,* the time of high water on the Syzigies, at the Dock Head, from several Observations which I made, was 11ʰ 28ᵐ. The Pilots generally allow 11ʰ ½ as the time. The greatest rise of the Tide at the Dock Head was 18 feet. This happened at the Springs near the Vernal Equinox of 1791; and except from particular combinations, it is never known to rise higher: as I was informed, the medium rise of the Springs is about 15½ feet. The Variation of the Compass in the beginning of the year 1791, by the mean of many Observations, I found to be 4° 50′, or 4° West.

During the passage from Bombay to Madras, I had an opportunity of ascertaining the Latitude and Longitude of *Point de Galle*, and of the *Friar's Head*; and as the Chronometer performed so well, it is to be regretted we did not see other places on the way. *Point de Galle* is, however, an important position to have accurately determined, and in the year 1791, the Longitude deduced from different Observations varied from 80° 1′ 30″ to 80° 8′.

On the 8th of September we saw *Point de Galle Flag Staff*. Three bearings of it were taken with the Azimuth Compass; one when it was E. 8° 30′ N.; a second when it was N. 68° 30′ E.; and the third when it was due North.

* As I mentioned in the former Paper, that the Survey, which connected the Light House and Church with the Place of Observation at Bombay, should be verified when very accurate purposes were in view—it may be proper to state that the Place where nearly all the Observations were taken, and all the Observations reduced to, was, so far as I recollect at this distant period (1795), near what was called *Branch Candy*, at a House built by W. Pemberton, Esq. of the Civil Service, with whom I was residing at the time.

The time when each bearing was taken was correctly noted; and a base, measured by the run of the Ship, corrected for current, was used for finding the distances, which, at the time the first bearing was taken, was 3,5 miles, and at the time the second was taken 3,7. The Ship being in the Longitude of Point de Galle at the time the third bearing was taken, no distance was necessary. Altitudes for finding the Longitude by the Chronometer were observed about half an hour before the first bearing was taken, which was at 5h 45′ p. m. Apparent time. These Altitudes give for the Longitude of the Ship at 5h 10′ p. m., (by mean of two days Observations after my arrival at Madras, and allowing 80° 19′ 42″ as the Longitude of the Church) 80° 9′ 0″, the Latitude of the Ship being at that time 6′ 2′ 4″ N.; the difference of Latitude and difference of Longitude made by the Ship to the times the bearings were taken, being of Latitude 2′ 4″ S. and 4′ 25″ S.; of Longitude 2′ 27″ E. 0′ 8″ E. and 8′ 3″ E.

The Latitude and Longitude of Point de Galle Flag Staff from these Observations were

	Latitude.	Longitude.
By the first bearing	6′ 6′ 47″ N.	80° 16′ 59″
Second	6 0 58	80 16 57
Third	. . .	80 17 8*
	6 0 59	80 17 2 E.

Three bearings of the Friar's Hood were also taken on the 10th of September with an Azimuth Compass: one when we were nearly in the Latitude, and another when in the Longitude of the Hood. The same care was taken in finding the distances, &c.; and the Latitude of the Hood was found to be 7° 27′ 35′ N.; Longitude 81° 39′ 3″ E.

It will no doubt be concluded, that where so much attention was paid to have the correct bearings and distances, that the Meridian Observation for the Latitude, and the Altitudes for the Longitude, were taken with a Sextant:—this was the case; and two sets of the latter were always observed.

About the time the earliest of the Observations mentioned in my former Paper were taken, three Correspondent Eclipses of the Satellites of Jupiter had been observed at Canton, by Captain *Hedsley*, and at Calcutta,† which gave the difference of Longitude of those places 24′ 54″.

Longitude of Calcutta, by the deduction in my former Paper	88° 22′ 39″
D. Longitude to Canton	24 54 0
Longitude of Canton	113 17 39

Captain *Hedsley*, by seven Eclipses of the Satellites, the difference in the Tables being allowed for, made the Longitude of Canton 113° 19′ 7″; the Mean of both is 113° 18′ 23″ East of Greenwich.

J. GOLDINGHAM.

* By the late Authorities, Point de Galle is placed 7′ 22′ 30″ E. of Bombay. Now, allowing Bombay to be in 72° 54′ 45″, as deduced in my former Paper, the Longitude of Point de Galle will be 80° 17′ 15″ East.

† This information was given me at the time by *Mr. J. Lindley*, formerly Assistant at the Royal Observatory.

EXPERIMENTS

FOR

ASCERTAINING THE VELOCITY OF SOUND,

AT MADRAS IN THE EAST INDIES.

BY

J. GOLDINGHAM, Esq.

F. R. S.

Read before the Royal Society, February 20, 1823;

AND

First printed in the Philosophical Transactions.

Experiments for ascertaining the Velocity of Sound.

The manner in which Sound is conveyed, and the theory of its Velocity, are too well known, and are to be found in too many Scientific works, to need detailed repetition here. The actual rate of its motion, particularly in different states of the Atmosphere, does not appear, however, to have been so well agreed upon by Philosophers. A Scientific Writer* in a standard work, states "That some of the most eminent Philosophers, judging that the knowledge of the flight of Sound might be of use on various occasions, have been at extraordinary pains and expense to measure the rate at which it moved; and the result of their Experiments, particularly of those which were best conducted, is as follows:

1. "That the Velocity of Sound is the same, whether by sea or by land, in dry or in rainy weather, by day or by night, in winter or summer.

2. "That Sound, whether more or less strong, flies with the same swiftness. For, by Experiments, a Cannon fired with a half-pound charge of Powder was heard at about the distance of seventeen miles and a half in the same time after the flash was seen, as it was when fired with a charge of fifty.

3. "That the times in which Sound is heard are proportional to the distance; that is, at a double distance it is heard in twice the time; at a triple distance in thrice the time," &c.

This, however, is not supported in all points by the Experiments I am about to detail; nor indeed could we expect it would be, from the manner in which Sound is conveyed; as this leads us to the conclusion, that the more dense, and the less elastic, the Atmosphere, the slower Sound would travel.

The *Velocity of Sound* has been variously given by different Philosophers, as the following Table,† originally from the Philosophical Transactions, will tend to shew.

	Feet.	
D. Is. Newton, Eq. Aur.	968	Prin. Ph. Nat. Math. L. 2 Prop. 50.
Nobilis D. Roberts	1300	Philos. Transact. No. 200.
Nobilis D. Boyle	1200	Essay of Languid Motion, p. 24.
D. Walker	1338	Philos. Transact. No. 247.
Mersennus	1474	Ballistic Prop. 20.
D. Flamsteed and Halley	1142	
Florentini celebres	1148	Exp. per Acad. del Cimen p. 141.
Galli celebres	1172	Du Hamel Hist. Acad. Reg.

* *Robertson.*

† Being a portion of a Dissertation by Mr. *Derham*, who, if I recollect right, makes the Velocity the same as *Flamsteed* and *Halley*.

To these may be added the following results of more modern Experiments and Calculations.

In Chili the Thermometer 73,5, Barometer 27,44 in. Sound was found to travel 1027 feet in a second. By Mr. *Hillington* 1120 feet.

Mr. *Richard Van Rees* has shewn theoretically that the Velocity of Sound in common air is 341,34 metres in a second.

Mr. *Bongenberg* at Dusseldorf, by Experiment, 333,3 metres, about 2 feet and a half more, it is stated, than the Velocity obtained at Paris by Experiment.

A metre, according to the accurate investigations lately made in *England*, contains 39,37079 English inches, and therefore 341,34 metres will be equal to 1120, and 333,3 to 1094,8 English feet.

"Some curious Experiments were made relative to Sound by Messrs. *de Thury*, *Maraldi*, and *de la Caille*, upon a line 14636 fathoms in length, having the Tower of Mount Lheri at one end, and the Pyramid of Montmartre at the other extremity, their Observatory was placed between the two objects. The result of their Observations was, that Sound moves 173 French* fathoms in a second when the air is calm. 2. That Sound moves with the same degree of swiftness whether it is strong or weak, an explosion of half a pound of Powder discharged in a Box, having been heard in the same space of time, as the report of a great Gun charged with nearly six pounds of Powder. 3. That the motion of Sound is uniform, its Velocity neither accelerating nor diminishing through the whole course of its progress. 4. That Sound travelled at the same rate, whether the Gun be pointed perpendicular to the Horizon, or *towards* the person who hears the report, or *from* him—by other Experiments however, the progress of Sound appeared to be impeded by a strong wind." *Dr. G. Gregory, Econ. of Nat.*

The *Velocity* in the foregoing Table, stated to be *Sir Isaac Newton's*, does not agree with that given by himself, which is 979 feet; this, however, is not deduced from experiment, but from the theory, no regard being had to the thickness of the solid particles of air, through which Sound is propagated. This being allowed for, according to the formula, brings out the Velocity of Sound greater in the proportion of ten to nine, or 170 feet more, making the Velocity 1088 feet; besides, vapours are dispersed through the air, which being of a different tone and elasticity, do not partake of the motion of the true air, by which Sound is propagated; and it is also demonstrated, that the motion of Sound will be quicker in such an Atmosphere than in an Atmosphere of true air, in the ratio of twenty-one to twenty; then the Velocity last found being augmented in that proportion, we shall have 1142 feet for the Velocity of Sound in a second, according to *Sir Isaac Newton's* theory.

La Place, using the Newtonian formula, which he considers correct, and a theorem which he gives, makes the Velocity of Sound in a second 345,33 metres (or 1133,06 feet English) the temperature being 42°. The *French* Academicians, as before mentioned, found the Velocity 337,18 metres, or 1106¼ feet English. By Experiments of *La Caille* the Velocity was 348,62 metres, 1130,1 feet English, but the temperature is not mentioned.

In the above enumeration of the Velocity of Sound, given by different Philosophers, very considerable discordances are observable; the actual reason of which cannot, I imagine, be discovered without the details of the Experiments, and these are not in my possession; but probably, a particular examination of the Experiments I am about to submit,

* Or 1106¼ English feet.

may furnish a clue for the discovery of the cause of these differences. *Halley* and *Flamsteed* are the only two, whose results agree with the theory; but I am not quite certain whether their results were deduced from theory or experiment. Be this as it may, the conclusion drawn from the Experiments made here agrees, in a very satisfactory manner, with that given by Sir *Isaac Newton*'s theory, and by the two other celebrated men just named.

Between the years 1793 and 1796 a considerable number of Observations were taken by myself, and under my superintendence, at the Observatory, with the view of ascertaining the Velocity of Sound. Not having the exact distances of the Guns from the Station when I returned to England, I wrote for further information upon the subject—which I had not obtained when I quitted Europe again. I therefore did not bring these Experiments forward at the time; and having a more elevated Station to observe from, by the erection of a new Building, and the advantage of corroborating distances, by the Trigonometrical Survey carrying on under the superintendence of Colonel *Lambton*, I entered upon the course of Experiments about to be detailed. The former Experiments (those of 1793 and 1796) were made with *Arnold*'s Chronometers, as were these now given. In examining works obtained from Libraries here, since I closed these Experiments, for information relative to the Results of like Experiments by other Observers, I found a Letter from Colonel *Beaufoy*, in the Annals of Philosophy, addressed a few years ago to Dr. Thomson; and recommending to be done in England, what, in all the essential points, has been performed here, as will appear by the following extract:

"It has frequently excited my surprise, as well as regret, and in which I am no wise singular, that use has not been made of the admirable Trigonometrical Survey, begun by the late General *Roy*, and continued with so much ability and attention by Colonel *Mudge* and Professor *Dalby*, to make Experiments on the Velocity of Sound; and however Experiments of this kind may have been neglected, it is hoped that the present Master General of the Ordnance, a near relation of the late scientific Captain *Phipps*, (afterwards Lord *Mulgrave*) will, for the purpose of perfecting a branch of science, no less curious than useful, order a Series of Experiments of this nature to be undertaken, not only in the inland parts of the kingdom, but also on different parts of the Coast." He then mentions that the Experiments should be made under different circumstances of the wind and weather, and at different times of the 24 hours, and proceeds to enumerate the Stations where the Experiments should be made. He recommends that Pocket Chronometers should be used, "which generally making five beats in two seconds, the Velocity of Sound could be determined to the fraction of a second;" and concludes by saying, "he has no doubt Scientific Foreigners would assist our Countrymen in finding the time Sound is travelling across that part of the Channel, where the shores are visible from each other."

At Fort St. George (Madras) a Morning and an Evening Gun are fired from the Ramparts, as is customary in fortified Places, the former at day light, and the latter at eight o'clock in the evening. At St. Thomas' Mount, the Artillery Cantonment, Morning and Evening Guns are also fired, one at day light, and the other at sun set. The Madras Observatory, in Latitude 13° 4′ 8″,5 North, is situated between these; the distance of it from the Fort, about half its distance from the Mount, the Fort being to the N. E. of the Observatory, and the Mount to the S. W. In former years, as I have mentioned before, Experiments were made by me for ascertaining the Velocity of Sound, but were not brought forward. And a new Building,* elevated so as to give a commanding view of the Country, particularly of the Mount† and Fort‡, having been erected, I commenced a new Series with the Morning and Evening Guns of both places. The Experiments with the Mount Gun, it will be seen, comprise an interval, which embraces all the varieties of the wind and weather during the revolution of the Sun; the interval with the Fort Guns is less, in consequence of the Morning and Evening

* The Station on this Building is about 55 feet above the level of the Sea, distant in a direct line 4000 yards.

† The Mount Gun is about 220 feet above the level of the Sea.

‡ The Fort Gun is about 30 feet above the level of the Sea.

Guns having been fired from different parts of the Ramparts, after the date at which the First Experiments close. All the Experiments were made with Chronometers, which had 400 beats in 40 seconds, sometimes by three Observers, myself and two of the Observatory Bengal Assistants, but generally by two: the Observers having repaired to the Station at the top of the Observatory building, a little before the expected time, and each holding his Chronometer so that he could distinctly hear the beats, began to count the instant he saw the flash, and continued counting until he heard the report; the number of beats between the flash and report was then immediately put down upon a slip of paper, by each Observer, without communication with the others, and the papers delivered to me for their contents to be registered; the height of the Thermometer, Barometer, and Hygrometer, with the direction of the wind and state of the weather, were also observed at the time, and registered; and in this manner the whole of the Experiments were made. The situation of the Guns with respect to the Station from which the Observations were taken, was very favourable, being in the direction, one of N. E. and the other of the S. W. monsoons—with the southerly wind and sea breeze, (both which prevail at certain seasons of the year,) blowing between the two. The Guns used were 9l pounders, charged with 8lbs. of Powder, and both pointed, not exactly towards the Station, but in a direction not far from it.

The distances were ascertained with great care: first, by a survey made for the purpose, a base having been measured, and the angles taken with a grand Circular Instrument, similar to that used in the Trigonometrical Surveys.* Secondly, by using two or three of Colonel Lambton's distances and bearings found by the Trigonometrical Survey.

The results were thus deduced, and verified in different ways; and I have reason to think that the distances of the Guns from the Observatory station are very accurately given. The mean of 12 results made the distance of the Mount Gun from the Station 20547 feet; and the mean of 6 results, gave the distance of the Fort Gun from the Station 12920,5 feet. The Map† will show the exact relative position and distance of the points, and the face of the Country over which the Sound travelled.

We see, as I before remarked, that the distance of one Gun from the Station is nearly double that of the other, and this will be found an advantage, in shewing whether Sound travels equally during its progress.

The Experiments are given in the subjoined Tables.

Table I. Contains the Experiments of each day with the Mount Gun, together with the state of the Atmosphere and the direction of the wind at the time of Observation: the titles at the heads of the columns render a particular explanation unnecessary—the number of Observers is stated in the third column, and the mean of their Observations in the sixth.

Table II. Contains the Mean of Observations of each day, when the air was calm.

Table III. The Mean of Observations of three days, when the wind was in the S. E. quarter.

Table IV. The Mean of Observations of three days, when the wind was in the N. E. quarter.

* I have not given the details of the Survey, as that would swell the Paper to an inconvenient size: the base, however, was measured with great care twice, and generally six Observations were taken for finding each angle, each Observation differing very little from the other.

† The angles and distances were protracted, and the Map of the intermediate Country filled up from the best Surveys, under the superintendence of *E. Lake*, Esq. of the Madras Engineers.

Table V. The Mean of Observations of three days, when the Wind was S. W. by W. or N. W.

Table VI. The Experiments with the Fort Gun, arranged as those in Table I, with the Mount Gun.

Tables VII, VIII, IX, and X. The Experiments with the Fort Gun arranged according to the state of the Wind, as in the former Tables of Experiments with the Mount Gun.

Table XI. Shews the mean motion of Sound for each month at the Madras Observatory, as found by the Experiments, at the mean height of the Thermometer, Barometer, and Hygrometer, given in the Table.

Upon a cursory inspection of Tables I and IV, it will be seen that the motion of Sound varies under different states of the Atmosphere and Weather: that according to the first Table, Sound at one time has been as long as 27,6 seconds in travelling from the Mount to the Observatory station; and at another time only 24,8 seconds; the distance being 29547 feet. In the first case, therefore, the Velocity of Sound was only about 1078 feet in a second; while in the other, its Velocity was nearly 1191½ feet. The extremes in Table VI. shew a still greater difference. This proves the necessity of making Experiments during a long interval, in order to obtain an accurate general result.

In Tables II and VII we find, as the Thermometer rose, the Atmosphere at the same time decreasing in density and increasing in its elasticity, that the Sound moved with greater rapidity.

That with the Wind in the S.E. quarter the Velocity was considerably increased, both from the Mount and Fort; more, however, in proportion, as might be expected, from the former than the latter.

That with the Wind at N.E. the Sound from the Fort Gun travelled with a greater, and from the Mount Gun with a less Velocity, than when the Wind was in any other direction; that Wind being favourable for increasing the Velocity from the Fort, and unfavourable from the Mount: the full effect of the Wind, however, is not to be ascertained by this Table alone, as the Thermometer during the time the N.E. Wind prevails is comparatively low, and the Barometer high; both which, as will have been seen by inspection of the Tables, occasion the Sound to travel slower than ordinary.

The Wind SW. W. and N.W. the Velocity from the Mount was accelerated, and that from the Fort retarded; but not in the degree that would have taken place had the Thermometer, Barometer, and Hygrometer, remained the same as in the N.E. Monsoon; but having been different, the Velocity was accelerated from both Guns on this account, in like manner as it was retarded in the N.E. Monsoon.

The following are the Results deduced from the Experiments in the different Tables. I shall first give the general Results from Table I and VI.

	Mean height of Barom.	Thermometer.	Hygrometer.	Seconds.	Distance.	Velocity in a Second.
Tab.	Inch.				Feet.	Feet.
I.	29,592	84,11	19	25,809	29,547	1142,18

Or almost precisely the same as the Velocity by the theory.

	Barometer.	Thermometer.	Hygrometer.	Seconds.	Distance.	Velocity in a Second.
Tab.	Inch.		Dry.		Feet.	Feet.
VI.	30,015	80,47	11,1	12,506	13932,3	1132,14

Here we find a difference from the former general Result by the Observations with the Mount Gun; the reason of which appears to be, that I could not, as I have before stated, carry on the Observations during at least a complete revolution of the changes in the Atmosphere; and that this is the reason I shall now endeavour to shew. The interval wanting is between the 28th of March and the 15th of July. Had this interval been wanting in the Experiments with the Mount Gun, there would have been a difference of 0,227 seconds in the mean result; but the mean of the Experiments in this interval is 29",632, and the mean of the whole 29",801, making the difference just mentioned.

Now 29",800+0",227=29",100, which would have been the mean number of seconds had the Observations with the Mount Gun been continued during the same interval only as the Experiments with the Fort Gun. Then 29",100 : 0",222 :: 12"300 (the mean of the Fort Observations) : 0",112. Now 12",300−0",112=12",198, which would have been the ground mean of the Experiments with the Fort Gun, had the same been continued as long as the Experiments with the Mount Gun. Then the distance 13032,3 feet, divided by 12,198, will give 1142,5 for the motion of Sound by the Experiments with the Fort Gun thus brought on; and this also agrees, within a fraction of a foot, with the Velocity according to Sir *Isaac Newton*; and with the Results by the two other celebrated Philosophers before named.

	Feet.
We then have by the Mount Gun	1142,18 for the Velocity.
And by the Fort Gun - - -	1142, 5.

The mean is 1142,34, or very nearly the Velocity above alluded to. Nothing could be more satisfactory than this general Result;* and it may be presumed, that the other Results in different states of the Atmosphere are equally to be depended upon.

The Velocity also by the Fort Gun, which, it will be recollected, is little more than half the distance of the Mount Gun from the Station, shews that Sound travels equally during its progress.

In the NE. Monsoon, the Sound was very indistinct at times; this, however, does not appear to have sensibly affected its motion. The French Academicians indeed proved, as I have mentioned before, that this made no difference in the Velocity.

I shall now proceed to the Conclusions from the other Tables; and first, those of the Experiments with the Mount Gun.

	Barometer.	Thermometer.	Hygrometer.	Wind.	Seconds.	Distance.	Velocity in second.
Table	Inches.	°	°		°	Feet.	Feet.
II.	29,800	83 95	90,71	Calm	25,712	29,547	1149,2
III.	29,872	85, 5	10,58	SE	25,734		1147,2
IV.	30,112	81 7	10, 9	NE	25,819		1150,0
V.	29,734	85 3	90,	SW. W. & NW.	25,714		1153,4
Secondly. The Experiments with the Fort Gun.							
Table							
VII.	30,111	78, 3	11,85	Calm	12,313	13032,3	1131,5
VIII.	30,093	82, 3	14, 6	SE	12,331		1139,1
IX.	30,131	78, 6	7,53	SE	12,316		1149,0
X.	29,979	81, 9	11,41	SW. W. & NW.	12,318		1148,4

* The Results by the Mount Gun may, however, be taken as the standard.

The Results in these Tables, like the separate Observations, show the necessity of making a Series of Experiments long continued, in order to obtain the correct general rate at which Sound travels; and this may afford a clue, as I observed in the first part of this Paper, for discovering the cause of the differences in the results by the authorities there quoted: it is difficult, indeed nearly, to ascertain the distance of two Stations, one far from the other, to the nearest foot; but errors of many feet in this respect, would make but a small difference in the Velocity as a second found by Experiment, when the Gun and Station were even at a moderate distance: we must therefore be led to conclude, that these differences have chiefly arisen from the Experiments having been made during a limited period only, and at unfavourable times for obtaining a mean result, instead of the interval which appears by these Experiments to be necessary.

A particular examination of the Tables and Results, will show the difficulty of ascertaining what proportion of the differences should be allowed to each of the Instruments used for finding the state of the Atmosphere, excluding of the effects of the Wind.

During the Calms, we might expect that the proportional part to be allowed for the difference in the Thermometer, Barometer, and Hygrometer, might be found with some degree of accuracy; the Barometers, however, are very considerable. Comparing the Results of Tables II and VII, we find the Barometer 0,18 lower, the Thermometer 5,5 higher, and the Air about 8 more dry by the former Table than by the latter, while the Velocity in a second is only 17,7 feet greater by one Table than the other.

We give, however, in addition, the following Results taken from the Tables of Calms, and arranged according to the different heights of the Thermometer and Barometer. These Results may assist us in coming to some conclusion upon this part of the subject.

Experiments with the Mount Gun.

Barometer.	Thermometer.	Hygrometer.	Seconds.	Distance.	Velocity in a Second.
Inches.	°	°		Feet.	Feet.
30,109	68,33	81,4	81,97	89,587	1087,7
29,860	68,	89,4	83,33		1080,2
30,140	77,16	71,8	82, 3		1098,4
30,068	81, 5	71,2	82,40		1096,7
29,853	68,50	88,2	83,91		1044,7
30, 02	62,38	85,0	83,01		1080,3
30,046	69, 9	88,9	82,73		1082,5

With the Fort Gun.

29,183	61, 2	93,8	10,87	11828,3	1088,8
29,139	54, 1	12,6	10,79		1095,7
29,063	50,78	8,9	10,11		1150,3
29,187	77, 6	10,8	10,37		1098,8
29,183	59,89	18,	10,15		1166,7
29,078	53, 8	10,4	10,29		1108,1

* For instance, a difference of about twenty-six feet in the Distance, between the Observatory station and the Mount Gun, would make only about a foot difference in the Velocity in a second.

† These are deduced from 100 Observations.

Where the changes are so numerous and so frequent as in the Atmosphere of the Earth, we cannot expect that our imperfect Instruments will be of a construction sufficiently delicate to show accurately every alteration that may affect the motion of the pulses of the Air; but by various computations and combinations of the results, we may hope to arrive at general conclusions, somewhat approaching the truth.

Now, by numerous combinations of the Observations just given, when the air was calm, we are led to conclude; first, that for each degree of the Thermometer 1,8 feet may be allowed to the *Velocity of Sound* for a second; for each degree of the Hygrometer 1,4; and for one-tenth of an inch of the Barometer* 0,8 feet. Then taking these numbers as the basis of the computation, we find the mean difference of the Velocity between a Calm, and in a moderate breeze of Wind, to be nearly 50 feet in a second. And by comparing other results together, a difference of about 112 feet in a second, or 2175 in a minute is found between the Wind being in the direction of the motion of Sound, or opposed to it.

Before I conclude these introductory observations, and explanations of the Experiments, it may be proper to refer more particularly to Table XI, exhibiting the mean motion of Sound for each month of the year, by the Experiments with the Mount Gun, according to the state of the Atmosphere indicated by the different Instruments, and to the prevailing Monsoons, which may be considered to be the same, during the same months, every year; full information respecting which is given in the former Tables. On examining this Table, it is rather curious to observe how regularly the mean Velocity proceeds to a maximum about the middle of the year, and afterwards returns in steps; giving the Velocity in one case 1164 feet in a second, and in the other of only 1059 feet. This regularity would, no doubt, be still greater with the mean of the Observations of several years.

J. GOLDINGHAM.

Hadras, 31st May, 1805.

* The rise and fall of the Barometer is very limited in this Country, as will be seen by an examination of the Tables. A sudden fall of 0,3 inch indicates a Gale of Wind.

Experiments for ascertaining the Motion of Sound, with a Gun placed on St. Thomas' Mount.

Station at the top of the Madras Observatory House.

TABLE I.

Month.	Day.	Nos. of Observations.	Morning or Evening.	Time.	Height of Barom.	Height of Therm.	Height of Hygrom.	Number of Beats.	Number of Seconds.	Wind.	Weather.
				h.	Inch.	°	Dry.		"		
1809. July	14	1	E	6	29,828	84,5	89	68, 0	21,8	SE	Cloudy.
	15	1	E	6	29,910	83,1	89	63, 0	21,5	SE	Do. and rain.
	16	1	E	6	29,900	83,5	18	61	25,5	Calm	Do. and rain.
	17	1	E	6	29,910	84,3	15	62	23,8	SE	Do.
	18	1	E	6	29,812	84,3	17	64	25,0	Calm	Thin haze.
	19	1	M	5	29,830	78,8	28	69	21,8	Light NE	Cloudy and rain.
		1	E	6	29,802	83,5	16	63	23,9	SE	Hazy.
	20	1	E	6	29,850	84,0	15	62	23,4	SE	Clear.
	21	1	E	6	29,879	83,5	15	61	23,6	SE	Hazy.
	22	1	M	5	29,900	80,0	12	64	23,0	Land	Cloudy.
		1	E	6	29,930	83,4	14	62	24,0	SE	Hazy.
	23	1	M	5	29,910	83,5	14	63	23,2	Land	Cloudy.
		1	E	6	29,980	83,3	15	64	23,0	Calm	Do.
	24	1	M	5	29,900	80,0	14	66	23,0	W	Hazy.
		1	E	6	29,915	83,2	16	65	23,9	SE	Cloudy.
	25	1	M	5	29,850	80,8	14	69	24,8	W	Do.
		1	E	6	29,925	84,3	20	65	23,2	SE	Hazy.
	26	1	M	5	30,015	80,8	16	68	23,0	Light W	Do.
		1	E	6	30,016	83,0	24	68	23,9	Calm	Thin haze.
	27	1	E	6	30,000	83,3	20	63	23,2	SE	Hazy.
	28	1	M	5	30,055	80,7	18	68	23,0	Land	Cloudy.
		1	E	6	30,020	83,4	11	63	23,2	Light SE	Do.
	29	1	M	5	30,020	79,8	9	65	23,0	SE	Clear.
		1	E	6	30,005	81,5	7	62	23,5	Fresh SW	Cloudy.
	30	1	M	5	30,040	77,5	7	64	23,0	Land	Clear.
		1	E	6	30,030	82,0	8	64	23,0	SE by E	Do.
	31	1	M	5	30,005	81,0	8	67	23,8	Light SW	Do.
		1	E	6	29,950	84,0	10	64	23,0	Light NE	Cloudy; some rain, thunder and lightning
Aug.	1	1	E	6	29,962	84,0	7	66	24,8	Calm	Clear.
	2	1	E	6	29,970	84,5	4	63	23,0	NW	Cloudy.
	3	1	M	5	30,080	80,9	4	65, 7	23,4	W	Do.
		1	E	6	29,975	84,5	5	63, 0	23,8	Light SE	Thin haze.
	4	1	E	6	30,000	84,0	6	64	23,0	SE	Clear.
	5	1	M	5	30,050	80,0	3	64	23,6	Calm	Cloudy, and some rain.
		1	E	6	29,960	84,0	7	63	23,9	SE	Hazy.
	6	1	E	6	29,955	83,6	10	63	23,2	SE	Thick haze.
	7	1	M	5	30,000	80,3	5	64	23,0	W	Cloudy.
	7	1	E	6	29,980	84,3	11	64	23,6	SE	Do.
	8	1	M	5	30,010	80,8	6	64	23,6	W	Do.
	9	1	E	6	29,900	84,0	10	61, 5	24,0	W	Hazy.
	10	1	E	6	29,930	83,5	16	63, 5	23,6	SE	Do.
	11	1	M	5	29,960	83,0	14	68	24,8	Light land	Clear.
		1	E	6	29,920	85,6	17	63	23,0	SE	Do.

Table I. continued.

Month.	Day.	No. of Observations.	Morning or Evening.	Time.	Height of Barom.	Height of Therm.	Hygrom.	Number of Beats.	Number of Seconds.	Wind.	Weather.
				h.	Each.	°	Dry.		"		
1811 Aug.	28	1	E	6	29,963	67,0	19	64	35,0	SE	Hazy; lightning and thunder.
	29	2	E	6	29,956	65,5	18	65, 5	35,1	SE	Do.
	30	3	M	3	29,956	82,1	15	61	29,0	Land	Cloudy.
		3	E	6	29,945	69,6	14	59	33,9	SW	Do. and rain; lightning with thunder.
	31	2	E	6	29,953	67,0	19	65, 5	35,1	Calm	Hazy.
	Sept. 1	2	E	6	29,980	68,5	15	61, 5	32,8	E	Do.
	2	2	M	3	29,956	69,9	16	63, 5	33,1	Land	Clear.
		1	E	6	29,900	65,5	14	64	32,0	NW	Rain.
	3	2	M	3	29,941	65,9	19	62, 5	33,1	Land	Cloudy and lightning.
		1	E	6	29,853	59,8	15	64	33,0	Land	Hazy.
	4	1	E	6	29,915	60,8	16	64	33,0	SE	Clear.
	5	1	E	6	29,925	60,5	19	65, 5	36,0	E by SE	Do.
		1	E	6	29,900	59,9	20	64	35,0	ESE	Hazy.
	6	1	E	6	29,900	60,3	20	63	35,8	Light SE	Do.
	7	2	M	3	29,975	61,3	18	62	33,8	Fresh WSW	Cloudy; lightning in the NE quarter.
		2	E	6	29,932	57,6	18	64	33,6	W by N	Do.; lightning to the westward.
	8	2	E	6	29,891	58,9	17	64, 5	35,9	SE by E	Clear; lightning in the SW quarter.
	9	2	M	3	29,870	64,0	15	63, 5	35,4	W by S	Do.
		1	E	6	29,815	55,0	16	63	33,9	SE	Do.; and lightning at a distance.
	10	1	E	6	29,893	54,5	17	63	35,0	SE by E	Hazy.
	11	2	E	6	29,920	56,0	16	63, 5	35,4	SE by S	Do.
	12	1	M	3	29,956	62,7	17	63	35,9	SE	Do.
	13	2	E	6	29,943	54,5	19	63	35,1	SE	Clear.
	14	1	-	-	29,941	55,5	18	62	33,9	ESE	Do.
	15	1	-	-	30,100	54,1	16	64	35,0	SE by E	Cloudy.
	16	1	-	-	30,000	54,5	15	63	36,0	NE by E	Do. and some rain.
	17	1	-	-	29,943	60,0	13	63	33,9	SE by S	Do. and rain.
	18	1	-	-	29,890	62,0	7	63	35,4	SE by E	Clear.
	19	1	-	-	29,943	63,5	16	64	35,0	ESE	Do.
	20	1	-	-	30,045	62,5	18	64	33,8	Calm	Cloudy.
	21	1	-	-	29,945	54,6	15	64	35,8	SE by E	Clear.
	22	1	-	-	29,913	54,1	14	64	35,0	SE by E	Cloudy.
	23	1	-	-	29,943	56,0	19	64	35,0	SE	Hazy.
	24	1	-	-	29,950	56,5	13	64, 5	35,9	Calm	Cloudy.
	25	1	-	-	29,890	54,5	14	64	35,8	SE by E	Hazy.
	26	1	-	-	30,090	57,0	13	64, 5	35,9	Calm	Do.
	27	1	-	-	30,100	56,5	17	64, 5	35,0	Do.	Do.
	28	1	-	-	30,050	56,0	21	64, 5	35,0	SE by E	Do.
	29	1	-	-	30,000	54,0	15	64, 5	35,8	SE	Do.
	30	1	-	-	30,040	57,0	19	64,25	35,7	SE by S	Clear.
	Oct. 1	1	-	-	30,080	54,5	19	63, 5	35,8	SW light	Hazy.
	2	1	-	-	30,100	58,5	13	64,25	35,7	NW	Clear.
	3	1	E	6	30,175	50,5	22	64,25	35,7	Calm	Do.
	4	1	-	-	30,000	50,5	17	64, 4	35,9	Do.	Do.
	5	1	-	-	29,929	51,0	20	64,25	35,7	Do.	Hazy.
	6	1	-	-	29,900	51,5	19	65	36,0	E by S	Thin haze.

TABLE I. *continued.*

Month.	Day.	No. of Observations.	Morning or Evening.	Time.	Height of Barom.	Height of Therm.	Hygrom.	Number of Rods.	Number of Seconds.	Wind.	Weather.
				h. Lock.	"	°	Dry.		"		
1807. Oct.	4	1	-	-	30,000	66,6	97	64	93,6	Calm	Hazy.
	5	1	-	-	30,014	66,1	90	64	93,6	SE by S	Do.
	6	1	-	-	30,030	66,3	85	64	92,6	SE	Clear.
	7	1	-	-	30,130	66,8	92	64	93,0	SE	Cloudy.
	8	1	-	-	30,090	64,5	92	64, 5	93,5	SE	Hazy.
	9	1	-	-	29,980	64,2	92	64, 0	93,0	SE	Clear.
	10	1	-	-	30,045	63,8	90	64	93,5	SE	Do.
	11	1	-	-	30,050	63,5	90	64, 5	94,5	SE by S	Do.
	12	1	-	-	30,060	62,5	91	65, 0	95,0	SE by E	Clear; sound indistinct.
	13	1	-	-	30,060	62,8	90	64, 5	95,5	NE	Do.
	14	1	+	-	30,020	62,5	92	66	96,1	E	Do.
	15	1	-	-	30,000	60,4	91	66, 5	96,6	E	Do.
							Damp				
	16	1	-	-	30,000	57,1	9	68	97,9	NE	Cloudy.
	17	1	+	-	30,080	61,5	9	67, 5	97,9	NE	Clear.
	18	1	+	-	30,050	63,4	9	65, 5	96,9	NE by N	Cloudy; distant thunder.
	19	1	+	-	30,070	59,4	9	66, 5	96,6	NE	Hazy.
							Dry				
	20	1	-	-	30,150	54,6	14	70	96,1	NE by E	Clear.
	21	1	-	-	30,190	53,8	13	66, 5	96,6	NE	Hazy.
							Damp				
	22	1	-	-	30,090	49,8	3	67, 0	96,8	NE light	Cloudy.
Nov.	1	1	-	-	30,070	53,0	4	66	96,6	ENE	Hazy.
	2	1	-	-	30,110	54,2	3,3	66, 5	96,6	NE	Cloudy.
							Dry				
	3	1	-	-	30,110	54,5	2	67, 7	97,1	E	Clear.
	4	1	-	-	30,190	54,5	6	65	95,0	E by S	Do.
	5	1	-	-	30,150	54,0	11	67	96,6	ESE	Do.
	6	1	-	-	30,140	55,0	15	69	96,6	ESE	Do.
	7	1	M	5	30,110	57,4	15	65, 5	95,5	S by E	Do.
	8	1	E	6	30,080	55,0	15,5	66, 0	96,8	ESE	Do.
	9	1	M	5	30,190	58,0	12	65, 0	95,0	Calm	Clear; sound indistinct.
	10	1	E	6	30,170	55,0	17	65,75	95,5	E by N	Do.
	11	1	E	6	30,000	53,0	14,5	66, 5	96,6	ENE by E	Clear; sound indistinct.
	12	1	M	5	30,170	58,0	11	66,75	96,7	NE	Do; ditto.
	13	1	E	6	30,175	52,2	11,5	67, 0	96,8	NE	Do.
	14	1	-	-	30,090	53,5	14	66, 5	96,0	E by N	Cloudy.
	15	1	-	-	30,134	51,0	3,5	68, 5	97,4	NE	Do.
	16	1	-	-	30,130	50,4	2	68, 5	97,4	NE	Rather cloudy; sound indistinct.
	17	1	-	-	30,160	52,0	14	66, 5	96,6	NE	Hazy.
	18	1	-	-	30,150	50,4	5	67, 5	97,0	Light NE	Do.
	19	1	-	-	30,130	51,8	5	67,25	96,5	NE	Clear.
	20	1	-	-	30,110	50,2	11	68,25	97,5	NNE	Do.
	21	1	-	-	30,050	50,0	10	69	97,5	NE	Do.
	22	1	E	6	30,190	49,7	15	66, 5	97,5	NE	Do; sound very indistinct.
	23	1	-	-	30,440	52,5	14	69	97,5	NE	Do.

TABLE I. continued.

Month.	Day.	No. of Observations.	Morning or Evening.	Time.	Height of Barom.	Height of Therm.	Height of Hygrom.	Number of Drops.	Number of Seconds.	Wind.	Weather.
1820.				h.	Inch.	°	Damp		°		
Dec.	4	2	-	-	30,015	75,6	9,5	65,25	26,1	SW by N	Clear.
	5	2	-	-	30,008	79,4	3,0	65, 0	26,6	SE	Do.
	6	2	-	-	30,075	81,0	6,5	66, 5	26,6	E	Do.
	7	2	-	-	30,085	80,4	3,5	67,25	26,9	NNE	Do. ; sound very indistinct.
							Dry				
	10	2	-	-	30,100	79,3	7,0	69,25	27,3	ENE	Hazy.
	12	2	-	-	30,128	78,8	11,5	68	27,2	N	Cloudy.
	13	1	-	-	30,090	78,0	0,5	67, 5	27,0	NE	Do.
							Damp				
	14	2		5	30,074	77,0	1,5	67,25	26,9	NE	Clear.
							Dry				
	15	2	E	6	30,108	84,0	4	67	26,6	E by N	Cloudy.
	16	1	-	-	30,120	82,0	9	67, 5	27,0	NE	Clear.
	17	1	M	5	30,122	77,2	2	66, 5	26,6	NW light	Do.
		1	E	6	30,112	80,5	7	68, 5	27,4	NE	Do.
	18	1	M	5	30,120	77,0	5	68	27,2	NW	Do. and dew.
	19	1	E	6	30,110	79,5	16	67, 5	27,0	NE	Hazy.
							Damp				
	20	2	-	-	30,028	81,0	9	66,25	26,5	NE	Clear.
1821.	27	1	-	-	30,038	81,5	6	67	26,8	ENE	Hazy.
Jan.	8	1	-	-	30,185	78,5	7	68	27,2	NE light	Cloudy.
	9	2	-	-	30,200	79,2	2	68, 5	27,4	NE	Clear.
							Dry				
	10	2	-	-	30,168	79,0	1	67, 0	26,8	NE	Do.
	19	2	-	-	30,220	82,0	9	67, 5	27,0	Calm	Do.
	20	1	M	5	30,155	70,2	6	66, 5	26,6	Do.	Do.
		2	E	6	30,155	80,0	8,5	67, 0	26,8	Do.	Hazy.
	27	1	M	5	30,175	75,0	7,5	66, 0	26,4	Do.	Clear.
	28	2	E	6	30,155	80,0	9	68, 5	27,3	East	Cloudy.
	31	1	M	5	30,138	76,5	5,5	67, 0	26,8	NE	Clear.
		2	E	6	30,138	79,3	12	67, 5	27,0	E	Do.
	29	1	-	-	30,130	80,5	9	66, 5	26,6	NE	Do.
	23	2	-	-	30,110	83,6	11,5	66,75	26,7	NE	Do.
	24	2	-	-	30,086	80,0	12	66,75	26,7	Calm	Do.
	25	2	-	-	30,088	80,5	10	67,75	26,7	Do.	Do.
	26	2	-	-	30,100	79,0	10	68, 5	27,4	NE	Cloudy.
	28	1	-	-	30,050	80,5	9,5	67	26,8	Calm	Clear.
	29	1	M	5	30,058	75,2	8,5	66, 5	26,6	Do.	Do.
		2	E	6	30,048	81,0	9,5	66,25	26,4	Do.	Clear.
	30	1	-	-	30,048	81,6	9,5	66,25	26,5	Do.	Do.
Feb.	1	1	M	5	30,000	74,5	8,5	68	26,9	Do.	Hazy ; dew.
	2	1	E	6	30,061	81,0	13	67, 5	27,0	NE	Clear.
	3	2	-	-	30,105	80,5	13	67	26,8	E	Do. ; sound indistinct.
	4	1	-	-	30,145	83,0	12	68	27,2	NE	Do.
		1	M	5	30,110	76,8	11	68	27,2	NE	Do.
	5	1	E	6	30,130	80,5	13	67	26,8	Light NE	Do.

Table I. continued.

Month.	Day.	No. of Observations.	Meaning of Evening.	Hour.	Height of Barom.	Height of Therm.	Height of Hygrom.	Number of Beats.	Number of Seconds.	Wind.	Weather.
				h	Inch.	°	Dry.		″		
1807. Feb.	6	1	E	5	30,000	78,0	12,5	60, 5	99,6	NE	Clear; sound indistinct.
		2	M	5	29,970	74,0	12,5	60, 5	99,6	Calm	Do.
	7	3	E	5	30,114	67,5	14	60	99,4	Do.	Do.
	8	3	-	-	30,125	75,0	09	60,25	99,7	SE	Do.
		4	M	5	30,150	73,5	10	60	99,6	NW	Do.
	9	3	E	5	30,130	68,5	06	60	99,0	SE Light	Do.
	10	3	-	-	30,160	70,4	01	60,75	99,8	E	Do.
	11	3	-	-	30,215	77,0	10	60, 5	99,9	Calm	Do.
	12	3	-	-	30,185	80,5	09,5	60,75	99,1	NE	Do.
	13	3	-	-	30,216	80,0	12	60, 0	99,0	Light NE	Do.
	14	3	-	-	30,155	80,5	14	60,25	99,8	E by N	Do.
	15	3	-	-	30,198	80,0	12	60,75	99,7	E	Do.
	16	3	M	5	30,196	75,5	12	60	99,4	Calm	Do.
	17	3	E	5	30,102	79,0	13,5	60	99,4	Light SE	Hazy.
	18	3	-	-	30,080	79,0	10	60	99,4	Calm	Clear.
		4	M	5	30,167	73,5	14,5	60	99,4	Do.	Do.
	19	3	E	6	30,100	79,5	14	60, 5	99,5	SE	Do.
	20	3	-	-	30,125	80,5	14	60	99,4	ESE	Do.
	21	3	-	-	30,150	81,0	14	60, 5	99,5	SE	Do.
	22	3	-	-	30,115	79,5	14	60,85	99,5	SE by E	Do.
	23	3	-	-	30,128	81,5	15	60,75	99,5	E by S	Do.
	24	3	-	-	30,160	81,5	15	60	99,5	SE	Do.
	25	3	-	-	30,150	81,0	15	60,75	99,5	SE by E	Do.
	26	3	-	-	30,150	80,0	14,5	60, 5	99,6	SE	Do.
	27	3	-	-	30,070	82,0	15	60, 5	99,5	SE	Do.
	28	3	-	-	30,015	81,4	14,5	60,25	99,1	SE	Do.
March	1	3	-	-	30,060	80,5	14,5	60	99,4	SE	Hazy.
	2	3	-	-	30,155	80,0	10	60, 5	99,8	SE	Clear.
	3	3	E	-	30,160	67,0	17	60,75	99,5	SE	Do.
	4	3	-	-	30,045	79,8	09	60, 0	99,7	SE	Do.
	5	3	-	-	30,065	81,5	8,5	60,25	99,1	SE	Do.
	6	3	-	-	30,135	80,0	09	60, 5	99,9	SE	Somewhat hazy.
	7	3	-	-	30,195	80,8	10	60,75	99,2	SE	Clear.
		4	M	5	30,195	73,5	10	60	99,4	Light SE	Do.
	8	4	E	6	30,110	78,5	10	60	99,4	SE by E	Do.
	9	4	-	-	30,105	80,0	14	60, 5	99,6	SE	Do.
	10	4	-	-	30,110	78,0	12	60, 5	99,6	SE	Cloudy, and calm.
	11	4	-	-	30,000	78,5	12	60, 5	99,6	SE	Clear.
	12	3	-	-	30,044	67,0	13,5	60,25	99,1	SE	Do.
	13	4	-	-	29,812	78,5	14	60, 5	98,8	SE	Do.
		5	M	5	30,000	73,4	11,5	60	99	SE	Do.
	14	4	M	-	30,175	81,4	14	60	99,6	Light SW	Do.
	16	3	E	6	29,960	80,5	13	60, 5	99,8	SE	Do.
	17	3	-	-	29,948	63,4	19	60, 5	99,8	SE	Do.
	20	4	-	-	30,045	81,0	19	60	99	SE	Cloudy.
	21	4	-	-	29,975	81,0	18,5	60	99	SE	Clear.

Table I. *continued.*

Month.	Day.	No. of Observation.	Morning or Evening.	Time.	Height of Barom.	Height of Therm.	Hygrom.	Number of Beads.	Number of Seconds.	Wind.	Weather.
1821. March	23	1	E	h. 6	Inch. 29,202	° 45,4	Dry. 13	68	° 93,6	SE	Clear.
	24	2	-	-	30,000	43,3	13	68,25	93,7	SE	Do.
	25	2	-	-	30,005	44,5	14,5	68	93,6	SE	Hazy.
	26	1	-	-	30,150	45,4	15	65, 5	90,9	Light SE	Do.
	27	2	-	-	30,105	44,0	15	65,25	90,1	SE	Clear.
	28	1	-	-	30,084	44,5	17,5	69	90,8	ENE	Hazy, and clear.
	29	2	-	-	30,110	45,6	18	65, 5	90,9	SE	Clear.
	30	2	-	-	30,055	44,5	15,5	65, 5	90,8	SE	Do.
April	1	2	-	-	29,193	44,7	16,5	68,75	93,8	SE	Do.
	2	2	-	-	29,193	44,6	18	69	90,0	SE	Do.
	4	1	-	-	29,198	45,0	20	68, 5	93,8	SE	Do.
	5	2	-	-	29,210	44,6	19	68, 5	93,6	SE	Do.
	6	2	-	-	30,118	45,0	17	68	93,6	SE	Do.
	7	2	-	-	30,110	45,3	17	68, 5	93,8	SE	Do.
	8	1	-	-	30,105	44,8	16,5	68	93,0	SE	Do.
	9	2	-	-	30,080	44,5	16,5	68, 5	93,8	SE	Do.
	10	1	-	-	30,028	45,5	17,5	69, 5	93,8	SE	Hazy.
	11	2	-	-	29,918	47,6	17	65,75	93,1	SE	Clear.
	12	2	-	-	29,915	47,2	18	65,75	93,5	S by E	Do.
	13	2	-	-	29,965	46,0	18	68, 5	93,8	S	Do.
	14	2	-	-	30,000	45,0	18	68, 5	93,8	SE	Do.
	15	2	-	-	30,000	45,0	19	68, 5	93,8	SE	Do.
	16	2	-	-	30,000	46,6	19	68,75	93,5	SE	Do.
	17	2	-	-	29,974	45,4	18,5	65,75	90,5	SE	Do.
	18	2	-	-	29,965	46,0	18	68,25	93,7	SE	Do.
	19	2	-	-	29,965	46,0	18	65,75	93,5	SE	Do.
	20	2	-	-	29,960	46,7	19	65, 5	90,8	Fresh SE	Do.
	21	2	-	-	30,045	46,1	17	68, 0	93,6	SE	Do.
	22	2	-	-	30,018	46,6	17,5	68, 5	93,8	SE	Do.
	23	2	-	-	29,988	46,8	18	65,75	93,5	SSE	Do.
	24	2	-	-	30,008	46,0	19	68,75	93,9	SE	Do.
	25	2	-	-	30,045	46,0	18,5	68,75	93,8	SE	Do.
	26	1	-	-	30,100	47,3	18	65, 5	90,8	SE	Do.
	27	2	-	-	29,965	46,3	18	65,25	93,1	SE	Do.
	28	2	-	-	30,000	45,5	18,5	68,25	93,7	SE	Do.
	29	2	-	-	30,004	46,0	18,5	65,25	93,1	SE	Do.
May	3	1	-	-	30,051	46,1	18	68, 0	93,6	SE	Do.
	4	2	-	-	30,016	47,0	18	68, 5	93,8	SE	Do.
	5	2	-	-	29,980	47,1	18,5	65, 5	93,4	SSE	Do.
	6	1	-	-	29,958	47,0	18,5	68, 5	93,8	SE by S	Do.
	7	1	-	-	29,960	47,1	18	69	96,0	SE	Do.
	8	2	-	-	29,938	47,6	17,5	68,75	93,9	SE	Do.
	9	2	-	-	29,910	47,3	18,5	68,25	93,7	SSE	Do.
	10	2	-	-	29,938	47,0	17	68,25	93,7	SE	Somewhat hazy.
	11	2	-	-	29,940	48,4	18,5	68,25	93,7	SE by E	Clear.
	12	2	-	-	29,900	47,0	18	68,75	93,9	SE	Hazy.

TABLE I. *continued.*

Month.	Day.	No. of Observations.	Morning or Evening.	Time.	Height of Barom.	Height of Therm.	Hygrom.	Number of Barom.	Number of Seconds.	Wind.	Weather.
				h.	Inch.	°	Dry.				
1823. May	13	2	E	8	29,495	58,5	17	61,75	87,5	SE by E	Clear.
	14	2	-	-	29,535	58,0	15	62,25	87,7	SE	Do.
	16	2	-	N	29,545	57,2	19	64, 5	85,5	SE	Do.
	17	2	-	-	29,592	56,0	16,5	64, 5	85,8	SE	Do.
	18	1	-	-	29,565	57,5	17,5	63, 5	87,4	SE	Do.
	19	2	-	-	29,778	59,2	21,5	61, 0	83,6	ESE	Do.
	20	2	-	-	29,700	59,5	25	64,25	85,7	ESE	Hazy.
	21	1	-	-	29,768	55,5	20	64, 5	87,8	SE	Cloudy.
	22	2	-	-	29,855	56,0	26	64,25	85,7	SSE	Hazy.
	23	1	-	-	29,805	55,2	20	63, 0	86,0	SE	Cloudy.
	24	2	-	-	29,750	55,5	25	64, 0	83,6	SE	Do.
	25	2	-	-	29,815	59,5	26	61,75	85,0	SE	Clear.
	26	2	-	-	29,885	59,0	29,5	64,25	85,1	SSE	Do.
	27	2	-	-	29,900	59,0	27,5	64, 0	85,6	SE	Do.
	28	2	-	-	29,907	60,5	29,0	63	85,8	SE	Do.
	29	2	-	-	29,900	59,5	22	62,75	85,1	SE	Do.
	30	1	-	-	29,888	57,5	24	63	85,9	SE	Do.
	31	2	-	-	29,900	57,2	23	63,25	85,5	S by E	Do.
June	1	2	-	-	29,910	57,2	27	64, 5	85,5	SE	Do.
	2	2	-	-	29,868	61,5	27	63, 5	85,1	Fresh SE	Hazy.
	4	2	-	-	29,940	60,2	28	63,75	85,5	SE	Clear.
	5	2	-	-	30,000	60,5	23	64,75	83,5	S	Hazy.
	6	1	-	-	29,954	57,2	22	59	85,0	Fresh S by E	Clear.
	8	1	-	-	29,924	59,0	20	58	85,6	SE	Do.
	9	2	-	-	29,880	60,5	18	61,75	83,5	SSE	Do.
	10	2	-	-	29,895	57,5	22	64, 0	85,6	SE by E	Do.
	11	2	-	-	29,858	60,5	19	62,75	85,5	S	Clear; distant lightning.
	12	1	-	-	29,854	57,0	19	64, 0	86,0	SE	Clear.
	13	1	-	-	29,843	60,2	22	60, 0	86,0	Light SE	Do.
	14	2	-	-	29,830	57,5	22	62, 5	85,1	SSE	Do.
	15	1	-	-	29,863	59,1	22	63	85,5	Fresh SE	Do.
	16	1	-	-	29,868	61,5	23	62, 5	86,5	Fresh SE	Do.
	17	1	-	-	29,855	59,5	22,0	63, 5	86,1	Fresh SE	Hazy.
	18	1	-	-	29,900	60,5	23,0	60, 0	86,4	Fresh SE	Clear.
	19	2	-	-	29,900	60,0	23,0	62,75	85,5	S	Cloudy.
	20	1	-	-	30,000	60,5	23,5	63	85,8	SE	Clear.
	21	2	-	-	29,945	61,5	25,0	62,75	85,0	Light ESE	Do.
	22	2	-	-	29,930	60,0	26,0	63, 5	85,4	SE	Cloudy.
	23	2	-	-	29,900	59,0	29	62,75	85,1	Light SE	Do.
	24	1	-	-	29,920	61,2	29,5	64, 5	85,5	SE by E	Do.
	26	2	-	-	29,980	60,5	29,5	61,25	85,7	SE	Do.
	27	2	-	-	29,945	63,0	25	63,25	85,3	SSW	Do.
	28	2	-	-	29,900	59,5	22	63,25	85,2	SW by S	Clear.
		2	M	5	29,950	64,5	27,5	63,85	85,1	NW	Hazy.
	29	2	E	5	29,900	60,5	23	64, 0	85,6	SE	Clear.
		2	M	5	29,975	60,0	25,5	63, 5	85,4	NW	somewhat hazy.

TABLE I. continued.

Month.	Day.	No. of Observations.	Morning or Evening.	Time.	Height of Barom.	Height of Therm.	Height of Hygrom.	Number of Rocks	Number of Seconds	Wind.	Weather.
1797.				h.	Inch.	°	Dry		"		
June	30	2	E	6	29,800	51,0	39	68	84,5	SW	Hazy.
		2	M	3	29,982	57,0	38,5	67,75	85,1	W	Clear.
July	1	3	E	8	29,830	60,7	47,5	69	85,2	Light W	Hazy.
		2	M	3	29,874	58,0	35	63,25	85,3	NW	Cloudy.
	2	2	E	6	29,855	61,0	40	63,25	85,2	Fresh W	Do.
		2	M	3	29,894	57,0	39,5	64,25	85,7	Light W	Hazy.
	4	1	E	6	29,858	61,5	50	63, 0	85,2	SW	Do.
		2	M	3	29,975	59,8	46,5	62,25	85,3	Light NW	Do.
	5	2	E	6	29,930	59,5	35,5	65, 0	85,8	W	Clear.
		2	M	3	29,868	66,5	50,0	65, 0	85,4	SE	Flying clouds.
	6	2	E	6	29,878	67,5	53	63, 5	85,6	SSE	Cloudy.
		2	M	6	29,913	68,7	50	66, 5	85,6	W by W	Clear.
	7	2	M	5	29,891	70,5	59	64,75	85,1	SW	Cloudy.
	8	1	E	6	29,908	67,4	51	64	85,0	SE and SW	Do.
		2	M	5	29,915	69,7	49,5	63,05	85,2	SW	Do.
	9	1	E	6	29,895	69,0	51,5	63, 5	85,8	Light SW	Hazy.
		2	M	5	29,941	70,5	54,7	62,75	85,5	W by W	Do.
	10	2	E	6	29,905	68,3	50	66,75	85,1	Light SE	Clear.
		2	M	5	29,934	71,4	51,5	64,75	85,1	W by N	Do.
	11	2	E	6	29,855	69,5	50,5	65,50	86,1	SE	Cloudy and rain.
		2	M	5	29,910	69,5	50,0	63	85,8	Light W	Clear.
	12	2	E	6	29,888	70,5	51	65,75	85,5	SE	Do.
		2	M	5	29,955	69,5	50	63, 5	85,8	Light W	Hazy.
	13	2	E	8	29,905	70,0	50,5	64, 0	85,0	SE by E	Cloudy.
	14	2	-	-	29,874	65,0	49,5	64,25	85,7	SE by E	Hazy.
		2	M	5	29,917	65,7	49,5	66, 0	85,6	Light SW	Do.
	15	2	E	6	29,915	66,5	49,0	64,25	85,7	SE	Do.
		2	M	5	29,939	64,5	47	65,25	86,1	Calm	Cloudy.
	16	2	E	6	29,899	64,5	44	64,25	85,7	SSE	Hazy.
		2	M	5	29,915	63,0	40,0	65, 0	85,9		Clear.
	17	2	E	6	29,892	65,0	46,5	64,25	85,7	SE	Do.
		2	M	5	29,904	66,7	48,5	65, 5	85,4	Light NW	Do.
	18	2	E	6	29,855	69,4	50,5	65,75	85,7	SE	Do.
		2	M	5	29,833	68,5	53	69	85,9	SW	Cloudy, and some rain.
	19	2	E	6	29,808	66,5	44,0	65,25	85,3	Calm	Do. and rain at 4 o'clock in the morning.
		2	M	5	29,810	63,5	39,5	64,50	85,3	Do.	Do. and rain in the night.
	20	2	E	6	29,800	66,5	49	64	85,6	SW	Do. and rain.
		2	M	5	29,822	64,5	43,0	63	85,7	SW	Hazy.
	21	2	E	6	29,878	67,0	49,5	63	85,8	W by N	Cloudy.
		2	M	5	29,949	64,5	39,0	64,25	85,1	Light W	Do. and some rain.
	22	2	E	6	29,928	67,5	44	65, 5	85,6	Calm	Hazy.
	23	2	-	-	29,866	66,5	34	68, 5	85,6	SW	Do.
		2	M	5	29,944	67,0	38	65,0	85,7	W	Clear.
	24	2	E	6	29,900	67,5	40	63,25	85,3	SE	Do.
		2	M	5	29,915	66,5	40	64,25	85,2	W	Do.
	25	2	E	6	29,896	67,5	50	64, 5	85,6	SE	Do.

Table I. continued.

Month.	Day.	No. of Observations.	Morning or Evening. Time.	Height of Barom.	Height of Therm.	Height of Hygrom.	Number of Beats.	Number of Seconds.	Wind.	Weather.
1822. July	25	9	M	h	Inch. 30,000	° 66,8	Dry. 68,5	68, 0	″ 65,8	S by W	Hazy.
	26	9	E	6	29,998	67,2	68,5	68,75	65,5	SE	Do.
	27	8	-	-	29,915	65,2	67,5	68, 5	65,4	SSW	Clear.
		5	M	5	29,945	64,2	65,2	64	65,6	Light W	Hazy.
	28	1	E	6	29,900	67,0	71	64	65,6	SW	Clear.
		5	M	5	29,945	66,4	68,2	64,25	65,5	NW	Do.
	29	2	-	-	29,960	66,0	65,6	64,25	65,5	Calm	Rain.
	30	9	E	6	29,918	67,0	65,5	63,75	65,8	SE	Clear.
		9	M	5	29,990	65,0	65,8	64, 0	65,6	NW	Hazy; lightning.
	31	9	E	6	29,961	67,5	65,5	64,25	65,7	Light NW	Cloudy.
		9	M	5	29,990	65,8	70	63,85	65,5	W	Rain.
Aug.	1	9	E	6	29,918	63,2	70	63,75	65,5	Light SSW	Hazy.
		9	M	5	29,960	65,0	70	63,85	65,5	SW	Cloudy. [the west wind.
	2	9	E	6	29,913	64,8	70	64,85	65,7	Calm	Do. distant thunder and lightning to
		9	M	5	29,955	65,4	68,6	64,85	65,7	SW	Rain.
	3	9	E	6	29,868	67,0	65,5	63,85	65,5	Calm	Hazy.
		9	M	5	29,944	66,0	65,5	64, 0	65,6	Do.	Somewhat hazy.
	4	1	E	6	29,900	65,8	71	64, 0	65,6	W	Cloudy.
		8	M	5	29,956	66,0	65,8	63,85	65,5	Light NW	Do. rain the whole night.
	5	9	E	6	29,900	66,5	71	63, 0	65,5	W	Misty.
		9	M	5	29,980	64,8	65,5	63,85	65,5	SW	Hazy.
	6	9	E	6	29,908	66,0	68,6	64, 5	65,6	SW	Cloudy.
		9	M	5	29,985	64,0	65	63,75	65,5	SW	Hazy.
	7	9	E	6	29,982	66,5	67,5	63,75	65,5	SW	Cloudy, and rain
	8	2	-	-	29,935	65,0	66,5	63,75	65,5	WNW	Do. do.
		2	M	5	29,960	63,4	67	64, 5	65,6	WNW	Do.
	9	2	E	6	29,920	63,5	65,5	63,85	65,5	W	Do. and rain.
		9	M	5	29,975	63,6	65,4	64,25	65,7	Light SW	Hazy.
	10	9	E	6	29,928	66,0	70,5	64, 5	65,6	SW	Cloudy.
		9	M	5	29,945	65,4	70,8	65, 0	65,8	SW	Hazy.
	11	9	E	6	29,879	66,4	70,0	64, 0	65,6	SW	Clear.
		9	M	5	29,918	66,4	71,8	64,25	65,7	NW	Do.
	12	9	E	6	29,910	66,8	70	63, 5	65,4	SW by N	Hazy.
		9	M	5	29,956	66,0	70,5	63, 5	65,4	W	Somewhat hazy.
	13	9	E	6	29,980	66,5	72,0	63,75	65,5	Calm	Cloudy.
		9	M	5	29,955	66,5	69,5	63,75	65,5	SW	Do.
	14	9	E	6	29,962	67,0	69,6	64, 0	65,6	SE	Do. lightning.
	15	9	-	-	29,928	66,0	65,5	63,75	65,6	SE	Do. and some rain
		9	M	5	29,997	64,5	68	64,85	65,7	NW	Clear.
	16	9	E	6	29,956	67,0	70	64, 0	65,6	SE	Do.
		9	M	5	29,990	66,4	69	63,75	65,5	Light SW	Do.
	17	9	E	6	29,948	69,0	71	63	65,6	Calm	Do.
		9	M	5	29,969	66,0	71,7	63,75	65,5	SW	Do.
	18	9	E	6	29,932	67,0	73	64, 5	65,6	Calm	Do.
		9	M	5	29,975	65,5	69,4	64, 5	65,6	W	Do.
	19	8	E	6	29,850	66,5	73,0	63,85	65,6	Calm	Hazy.

Table I. *continued.*

Month.	Day.	No. of Observation.	Morning or Evening.	Time.	Height of Barom.	Height of Therm.	Height of Hygrom.	Number of Drops.	Number of Seconds.	Wind.	Weather.
				h.	Inch.	°	Dry.		°		
1811. August	19	2	M	5	29,913	57,5	58	64	55,6	Light W	Cloudy.
	20	1	E	6	29,875	60,6	59,5	68,7	55,1	SW	Do.
		2	M	8	29,913	56,1	59,5	65, 0	55,8	Light W	Hazy.
	21	1	M	5	29,960	56,5	59	65,7	55,8	NW	Do.
	22	1	E	6	29,919	60,5	55	65,91	55,8	Calm	Do.
		2	M	5	29,874	56,8	59,5	65,75	55,8	W	Somewhat hazy.
	23	1	E	6	29,933	58,7	59	65,75	55,8	W	Clear.
		2	M	5	29,902	56,8	59,5	64	55,8	NW	Do.
	24	1	E	6	29,932	57,5	59	64, 5	55,8	SE	Do.
		2	M	5	29,872	56,0	59	62, 6	55,8	SW	Very clear.
	25	1	E	6	29,938	56,7	59,5	63, 5	55,8	S	Clear.
	26	1	-	-	29,933	55,6	59	64, 5	55,8	SSE	Cloudy.
		2	M	5	29,901	54,0	59	65,75	55,8	W	Hazy.
	27	1	E	6	29,915	57,0	59	64,75	55,8	SE	Very clear.
		2	M	5	29,880	55,0	59,5	65, 5	55,8	Light SW	Cloudy.
	28	1	E	6	29,911	55,6	59,5	64, 5	55,8	SE	Clear.
		2	M	5	29,869	54,5	59,5	65, 0	55,8	SW	Do.
	29	1	E	6	29,901	57,5	59,5	64, 5	55,8	SE	Do.
	30	1	-	-	29,948	56,5	59	63	55,0	SE	Do.
		2	M	5	29,919	54,0	58	63	55,8	S	Cloudy, and lightning.
	31	1	E	6	29,955	55,5	58	63,25	55,8	SE	Clear.
Sept.	1	1	-	-	29,944	55,0	59,5	63	56,0	SE	Do.
	2	1	-	-	29,890	56,0	58	62, 5	55,8	E	Cloudy, and thunder.
		2	M	5	29,860	54,5	59,5	62,50	55,5	Fresh SW	Do. and rain in the night.
	3	1	E	7	29,919	57,0	59,5	63,75	55,5	S	Clear.
		2	M	5	29,885	55,5	59	63, 5	55,5	SSW	Cloudy, and some rain.
	4	1	E	6	29,903	56,0	59,5	64,75	55,5	SE	Do.
		2	M	5	29,865	55,7	59,5	65, 0	56,0	Calm	Thin haze.
	5	1	E	6	29,945	57,5	59	64,75	55,0	Light SE	Clear.
		2	M	5	29,896	56,0	59,5	63,50	55,5	Light SW	Do.; and lightning in the NE.
	6	1	E	6	29,926	56,5	59	64,75	55,5	SE	Hazy.
	7	1	-	-	29,963	55,5	59	65,75	55,5	SW	Cloudy.
		2	M	5	29,925	54,5	59	65,50	55,5	SW	Hazy.
	8	1	E	6	29,960	57,5	59	65,75	55,5	SE	Do.
		2	M	5	29,961	55,0	59,5	65,50	55,5	SW	Rain in the night.
	9	1	M	5	29,958	56,0	59	65, 5	55,5	NNW. cold	Cloudy; and rain from sun set to sun rise.
	10	1	E	6	29,999	56,0	59	64,50	55,5	Calm	Clear. [Thunder.
		2	M	5	29,953	54,0	59,5	64,75	55,0	Light NW	Rain; lightning, and uncommonly loud
	11	1	E	6	29,988	55,0	59,5	64, 5	55,5	Calm	Clear.
		2	M	5	29,953	54,5	59,5	63	55,5	SW. cold	Cloudy the whole night.
	12	1	E	6	29,963	54,5	59,5	64, 5	55,5	Calm	Hazy.
		2	M	5	29,873	54,0	59,5	64,50	54,5	Light SW	Rain, with lightning.
	13	1	E	6	29,926	55,5	59	65,75	56,5	Calm	Hazy.
		2	M	5	29,879	54,5	58	65,75	55,5	Do.	Cloudy: rain at night.
	14	1	E	6	29,960	54,5	57	64	55,0	Do.	Clear.
		2	M	5	29,905	54,5	58	64,75	55,5	Do.	Do.

TABLE I. *continued.*

Month.	Day.	Nos. of Observations.	Morning, or Evening.	Time.	Height of Barom.	Height of Therm.	Height of Hygrom.	Number of Rain.	Number of Seconds.	Wind.	Weather.
1811. Sept.	16	0	E	h.	Inch.	°	Dry.			Calm	Hazy.
		1	M							Do.	Clear.
	17	0	E							SE	Hazy.
		1	M							NW	Clear.
	18	0	E							SE	Thin haze.
		1	M							Calm	Hazy.
	19	0	E							Do.	Clear.
	20	0	-	-						SE	Hazy.
		0	M							NW	Tolerably clear.
	21	1	E							SW	Cloudy.
		1	M							Calm	Do. with lightning.
	22	0	E							Do.	
	23	0	-	-						SW	Hazy.
		0	M							W	Mostly cloudy.
	24	0	M							Calm	Clear.
	25	0	E							Do.	Cloudy.
	26	0	-	-						SW	Hazy.
		0	M							Do.	Cloudy.
	27	0	E							SE	Hazy.
		0	M							Calm & dew	Clear.
	28	0	E							Calm	Cloudy; rain and lightning.
		0	M							Light SW	Cloudy, and lightning.
	29	0	E							SW	Cloudy, and rain.
		0	M							Calm	Clear.
	30	0	E							Do.	Do.
		0	M							Do.	Tolerably clear.
October	1	0	E							SE	Clear.
		0	M							Calm	Mostly clear.
	2	0	E							Light SE	Clear.
	3	0	-	-						SE	Do.
	4	0	-	-						Do.	Do.
		0	M							Calm	Clear, and distant lightning.
	5	0	E							Do.	Cloudy.
		0	M							SW	Cloudy, and rain.
	6	1	E							NE	Cloudy; rain, and lightning with thunder.
		0	M							W	Hazy, and some rain.
	7	0	E							NW	Cloudy.
		0	M							Calm	Cloudy at one rise.
	8	1	E							NE	Hazy.
		1	M							Calm	Clear.
	9	0	E							Light NE	Do.
		0	M							Calm	Do.
	10	0	E							Do.	Do.
		0	M							Do.	Do.
	11	0	E							Do.	Do.
		0	M							Do.	Very clear.

Table I. continued.

Month.	Day.	No. of Observations.	Morning or Evening.	Time.	Height of Barom.	Height of Therm.	Height of Hygrom.	Number of Beats.	Number of Seconds.	Wind.	Weather.
1821.				h.	Inch.	°	Dry		°		
October	12	2	E	6	30,018	80, 6	20	67	26, 8	E	Very clear.
		2	M	5	30,070	79, 6	21,5	65,25	26, 1	Calm	Do.
	13	1	E	6	30,025	80, 0	25	66, 2	25, 4	Do.	Do.
		2	M	5	30,080	81, 0	21	65, 0	26, 0	Do.	Do.
	15	2	E	6	30,085	86, 7	24	66,25	26, 5	E	Do.
	16	2	-	-	30,065	87, 5	23	66,75	26, 7	Do.	This haze.
	17	2	-	-	30,100	83, 5	18	67	26, 8	NE	Hazy. [afternoon
	18	2	-	-	30,078	83, 0	17	67, 5	27, 8	NNE	Cloudy; rain at five o'clock in the
	19	1	-	-	30,100	83, 0	22	67, 5	27, 0	Light NE	Clear.
	20	2	-	-	30,043	83, 5	27,5	67, 5	27, 8	NE	Do.
	21	1	-	-	30,055	82, 5	30	67, 5	27, 0	Light NE	Do.
	22	2	-	-	30,100	79, 0	27	67, 0	26, 8	N	Do
	23	1	-	-	30,070	84, 0	25	68, 5	27, 6	NE	Cloudy.
	24	2	-	-	30,025	80, 0	19	68,25	27, 3	Light NE	Clear.
	25	2	-	-	30,044	84, 4	12	65,75	26, 7	SE	Do.
	26	2	-	-	30,000	81, 2	13	67,75	27, 1	E	Do.
	27	2	-	-	30,055	84, 0	13,5	67, 0	26, 8	Light NE	Do.
Nov.	2	2	-	-	30,035	81, 5	1,5	65, 5	26, 7	Do.	Do.
	3	1	-	-	30,072	77, 0	0,2	66, 5	26, 0	Calm	Misty.
	4	1	-	-	30,113	83, 0	3,0	68	27, 2	NE	Clear.
	5	1	-	-	30,100	82, 5	8	67, 5	27, 0	NE	Hazy.
	6	1	-	-	30,078	82, 0	10,5	68	27, 2	NE	Do.
	7	1	-	-	30,075	82, 0	13,0	67, 5	27, 0	NE	Clear.
	8	2	-	-	30,000	81, 5	11	67,25	26, 8	NE. cold	Cloudy, and rain.
	9	2	-	-	30,100	83, 0	9,5	68,25	27, 3	NE	Clear.
	10	2	-	-	30,055	81, 0	7	68,75	27, 5	NE	Cloudy, and rain.
				Mean	29,992	84,11	19,0		25,803		

TABLE II.

Experiments selected from Table I., the Air having been Calm.

Month.	Day.	No. of Observations.	Morning or Evening.	Time.	Height of Barom.	Height of Therm.	Height of Hygrom.	Number of Beats.	Number of Seconds.	Weather.
1820.				h	Inch.	°	Dry		°	
Aug.	21	2	E	6	29,955	87,5	19	63, 5	25, 4	Hazy.
Sept.	10	2	-	6	30,045	83,5	14	64	25, 6	Cloudy.
	11	2	-	6	29,930	82,5	13	64, 5	25, 8	Do.
	13	2	-	6	30,000	87,0	23	64, 5	25, 8	Hazy.
	14	2	-	6	30,100	88,5	27	64, 0	25, 6	Do.
	30	2	-	6	30,173	89,2	29	64,25	25, 7	Clear.
Oct.	1	2	-	6	30,090	89,5	17	64, 8	25, 8	Do.
	2	2	-	6	30,038	91	24	64,50	25, 9	Hazy.
Nov.	8	2	M	5	30,088	76	12	65	26, 0	Clear.
1821.										
Jan.	12	2	E	6	30,220	82	9	67, 5	27, 0	Clear.
	16	2	-	6	30,135	80	8,5	67, 0	26, 8	Hazy.
		1	M	5	30,150	76,2	6	66, 8	26, 8	Clear.
	24	2	E	6	30,055	80,0	12	66,75	26,70	Do.
	29	2	-	6	30,045	81,0	8,5	66,25	26, 5	Do.
Feb.	7	2	-	6	30,144	80,5	14	66, 0	26, 4	Do.
	11	2	-	6	30,213	77,0	16	65, 5	26, 2	Do.
July	13	2	M	5	29,900	84,5	17	65,25	26, 1	Cloudy.
	18	2	E	6	29,900	86,2	24,8	63,25	25, 3	Do. ; some rain at 4 o'clock in the afternoon.
		2	M	5	29,909	85,0	23,5	64,25	25, 7	Do. ; rain in the night.
	22	2	E	6	29,858	87,5	31	62, 5	25, 4	Hazy.
	23	2	M	5	29,900	86,0	25,0	64,75	25, 9	Rain.
August	2	2	E	6	29,913	84,5	22,0	64,25	25, 7	Cloudy.
	3	2	-	6	29,898	87,0	23,5	63,25	25, 3	Hazy.
		2	M	5	29,944	86,0	23,5	64, 0	25, 6	Do.
	12	2	E	6	29,925	90,5	33,0	63,75	25, 5	Cloudy.
	17	2	-	6	29,848	89,8	34,0	63, 0	25, 2	Clear.
	18	2	-	6	29,853	87,0	33	64, 5	25, 8	Do.

Month.	Day.	Morning or Evening.	Time.	No. of Observations.	Height of Barom.	Height of Therm.	Height of Hygrom.	Number of Beats.	Number of Seconds.	Weather.
1820.			h		Inch.	°	Dry		°	
August	19	E	6	2	29,833	88,5	23,5	63,25	25, 3	Hazy.
	22	E	6	2	29,918	90,5	25,0	63,25	25, 3	Do.
Sept.	4	M	5	2	29,960	82,7	21,5	65, 0	26, 0	Do.
	10	E	6	2	29,888	86,0	21,0	64,25	25, 7	Clear.
	11	E	6	2	29,804	80,0	22,0	64, 5	25, 8	Do.
	13	E	6	2	29,838	83,0	22,0	63,75	25, 3	Hazy.
		M	5	2	29,879	80,5	18	64,75	25, 9	Cloudy ; rain at night.
	15	E	6	2	29,863	81,5	17	64, 0	25, 6	Clear.
		M	5	2	29,925	82,8	15	64,75	25, 9	Do.
	16	E	6	2	29,860	81,5	15	64, 0	25, 6	Hazy.

Table II. continued.

Month.	Day.	Morning or Evening.	Time.	No. of Observations.	Height of Barom.	Height of Therm.	Height of Hygrom.	Number of Beats.	Number of Seconds.	Weather.
1820.			h.		Inch.	°	Dey.		°	
Sept.	16	M	5	2	29,923	83, 0	15	67,75	25, 5	Clear.
	18	-	5	2	29,948	84, 0	16, 5	64,25	25, 7	Hazy.
	19	E	6	2	29,920	85, 6	17, 5	64, 5	25, 8	Clear.
	21	M	5	2	29,818	82, 6	17, 6	64,75	25, 9	Cloudy; with lightning.
	22	E	6	2	29,915	83, 0	19, 0	64,25	25, 7	Hazy.
	24	M	5	2	29,916	82, 6	23, 5	63,75	25, 5	Clear.
	25	E	6	2	29,878	87, 0	18, 0	64,75	25, 9	Cloudy.
	27	M	5	2	30,018	82, 7	18, 0	63,75	25, 5	Clear.
	28	E	6	2	29,855	84, 4	23	65,75	26, 3	Do.; rain and lightning.
	29	M	5	2	30,034	80, 8	18, 8	66, 0	25, 6	Clear.
	30	E	6	2	30,015	84, 2	18, 5	64,75	25, 9	Do.
		M	5	2	30,074	81, 0	18, 0	63,75	25, 5	Very clear.
October	1	M	5	2	30,089	82, 6	17, 8	64,25	25, 7	Clear.
	4	M	5	2	29,973	82, 5	19	64, 5	25, 8	Do. and distant lightning.
	5	E	6	2	29,923	85, 5	18	64,25	25, 7	Cloudy.
	7	M	5	2	29,990	81, 4	18	65,25	26, 1	Do. at sun rise.
	8	M	5	1	30,015	83, 0	17, 2	64, 5	25, 8	Clear.
	9	M	5	2	29,984	83, 0	17, 8	65,25	26, 1	Do.
	10	E	6	2	29,978	85, 0	27, 0	65, 5	26, 2	Do.
		M	5	2	30,030	83, 6	19	64, 5	25, 8	Do.
	11	E	6	2	30,005	86, 0	27	66, 5	26, 6	Do.
		M	5	2	30,060	82, 6	22	64,75	25, 9	Very clear.
	12	M	5	2	30,070	79, 6	21, 5	65,25	26, 1	Clear.
	13	E	6	1	30,025	86, 0	23	66, 0	26, 4	Do.
	13	M	5	2	30,080	81, 0	21	65, 0	26, 0	Do.
Nov.	3	E	6	1	30,072	77, 0	0, 5	66, 5	26, 6	Misty.
				Mean	29,990	82,85	20,21		25,712	

TABLE III.

The Wind having been South Easterly. Mean of the Observations of three days.

Month.	No. of Observations.	Mean Height of Therm.	Mean Height of Barom.	Mean Height of Hygrom.	Number of Beats.	Number of Seconds.	Weather.
		°	Inch.	°		°	
Aug.	6	85,5	29,915	17, 3	63,35	25, 34	Hazy.
Sept.	6	85,6	29,957	17	63,85	25, 34	Do.
	6	85,0	29,991	17	64,15	25, 66	Do.
	6	82,9	29,960	12	63,35	25, 34	Mostly clear.
	6	84,2	30,005	14	64	25, 6	Do. cloudy.
	6	85,8	30,055	18, 3	64,25	25, 7	Rather hazy.
Nov.	6	81,6	30,137	10, 7	63, 3	26, 2	Clear generally.
	6	81,2	30,179	6, 2	63, 5	26, 2	Clear.
Feb.	6	80,2	30,197	14	65,65	26, 26	Mostly clear.
	6	78,0	30,118	15	65, 9	26, 36	Do.
	6	82,1	30,030	14, 3	65,75	26, 3	Do.
March	6	81,8	30,112	17, 6	65, 3	26, 12	Alternately clear and cloudy.
	6	81,9	30,103	17, 5	65, 5	26, 2	Clear.
	6	83,0	29,999	12, 7	64, 4	25, 78	Mostly clear.
	6	83,8	30,092	13, 3	64,97	25, 6	Clear.
April	6	84,4	30,109	16, 0	65, 1	25, 6	Do.
	6	84,3	30,113	17, 7	64,35	25, 7	Do.
	6	86,4	29,919	17, 2	64, 6	25, 6	Do.
	6	85,3	29,985	17, 7	64, 5	25, 9	Do.
	6	86,2	29,979	17, 1	64,85	25, 68	Do.
	6	86,9	29,966	16, 5	64, 4	25, 76	Do.
	6	87,5	30,005	17, 8	64,35	25, 74	Do.
	6	85,3	29,990	17, 0	64,75	25, 9	Do.
May	6	86,8	30,006	16, 0	64, 4	25, 76	Do.
	6	87,6	29,938	17, 3	64,15	25, 78	Somewhat hazy.
	6	89,0	29,900	16, 2	64, 6	25, 82	Clear.
	6	87,5	29,908	16, 8	64,45	25, 78	Do.
	6	88,5	29,771	24, 2	64, 2	25, 68	Mostly hazy.
	6	89,1	29,899	23, 8	64, 3	25, 72	Clear.
	6	88,3	29,876	21, 5	63,25	25, 30	Do.
	6	89,3	29,916	27	63,85	25, 34	Do.
	6	86,8	29,992	29	63,85	25, 34	Do.
	6	85,4	29,864	21, 3	63,65	25, 48	Do. distant lightning
	6	88,0	29,947	29	63, 7	25, 48	Cloudy.
	6	85,6	29,947	24, 8	63, 6	25, 40	Do.
July	6	87,1	29,891	30, 0	63,65	25, 40	Mostly cloudy.
	6	87,8	29,878	31, 2	63, 9	25, 60	Clear; cloudy and rain.
	6	85,8	29,882	31, 6	64,15	25, 66	Generally hazy.
	6	86,3	29,879	26, 7	64, 1	25, 64	Clear.
	6	87,3	29,918	29, 5	63,85	25, 34	Do.
Aug.	6	87,3	29,941	27, 8	63,85	25, 34	Do.
	6	86,7	29,923	28, 7	64,35	25, 74	Do.
	6	87,0	29,912	29, 5	64, 5	25, 8	Do.

TABLE III. *continued.*

Month.	No. of Observations.	Mean Height of Therm.	Barom.	Hygrom.	Number of Beats.	Seconds.	Weather.
		°	Inch.	°		°	
Sept.	6	65,2	29,979	91	64,25	65, 7	Clear.
	6	66,7	29,991	75, 9	64, 4	65, 76	Do.
	6	65,6	29,913	89, 7	64,33	65, 89	Rather hazy.
	6	65,0	29,901	79, 0	64,75	65, 90	Hazy.
Oct.	6	65,2	29,907	75, 2	64,25	65, 71	Clear.
Mean		65,3	29,979	79,05		65,734	

TABLE IV.

The Wind having been North Easterly. Mean of the Observations of three days.

Month.	No. of Observations.	Mean height of Therm.	Barom.	Hygrom.	Number of Beats.	Seconds.	Weather.
1820.			Inch.	Dry.		°	
Oct.	6	57	30,098	9	66, 5	66, 6	Mostly hazy.
Nov.	6	52,9	30,120	5,6	66,05	66, 60	Clear and cloudy alternately.
	6	51,5	30,184	10,3	66,75	66, 70	Clear.
	6	51,3	30,150	4,5	66,05	66, 68	Do.
Dec.	6	50,9	30,106	4,2	67, 5	67, 00	Do.
1821.							
Jan.	6	78,1	30,009	5,7	67,85	67, 14	Mostly cloudy.
	6	50,6	30,161	9,7	67,05	66, 97	Clear and cloudy alternately.
	6	50,7	30,129	8,9	67,05	66, 81	Clear.
Feb.	6	50,6	30,150	14,8	67,35	67, 02	Do.
	6	50,3	30,186	12,3	66, 7	66, 68	Mostly clear.
Oct.	6	54,0	30,081	91	66,75	66, 76	Do.
	6	53,6	30,070	91,7	66, 7	66, 68	Mostly hazy.
	6	53,3	30,074	90,2	67,45	66, 98	Cloudy, and rain.
Nov.	6	52,3	30,062	9,3	66, 4	66, 07	Do. do.
	6	51,1	30,050	16,6	67,65	67, 06	Clear.
Mean		51,3	30,112	10,9		66,816	

TABLE V.

The Wind having been SW. W. and NW. Mean of the Observations of three days.

Month.	No. of Observations.	Mean height of Therm.	Mean height of Barom.	Mean height of Hygrom.	Number of Beats.	Number of Seconds.	Weather.
		°	Inch.	Dry.	° ′	″	
Aug.	6	82,0	29,940	11	63, 0	25, 2	Cloudy, and thunder.
Sept.	6	82,2	29,961	19,3	63,35	25, 34	Cloudy, and lightning.
	6	86,7	29,985	13,3	63,92	25, 36	Do. do.
Dec.	6	85,3	29,973	11,8	63,95	25, 38	Variable.
1821.							
June	6	87,3	29,950	20,3	62, 9	25, 16	Hazy.
July	6	88,3	29,878	36,3	63, 0	25, 20	Mostly cloudy.
	6	88,3	29,917	37,8	63, 7	25, 45	Do. hazy.
	6	87,3	29,917	30,8	63,15	25, 18	Hazy.
	6	86,7	29,934	32,9	63,20	25, 28	Generally cloudy.
	6	85,2	29,914	29,6	63, 5	25, 4	Clear.
	6	85,9	29,874	26,0	63, 5	25, 4	Hazy.
	6	85,8	29,921	29,8	62,75	25, 1	Do.
	6	86,2	29,964	30,0	63, 0	25, 2	Variable.
	6	85,6	29,943	26,3	64, 1	25, 6	Clear.
	6	86,0	29,964	26,3	63,85	25, 54	Hazy; cloudy and lightning.
Aug.	6	82,2	29,980	22,2	63,75	25, 50	Cloudy; distant thunder and lightning
	6	82,8	29,956	23,7	63,55	25, 26	Cloudy and rain. [with rain.
	6	84,7	29,879	27,0	62,65	25, 00	Do. do.
	6	84,2	29,841	26,3	64, 8	25, 14	Rain.
	6	85,7	29,869	29,1	62,95	25, 30	Hazy.
	6	83,1	29,923	33,9	63, 4	25, 4	Somewhat hazy.
	6	85,7	29,956	29,8	63, 5	25, 4	Clear.
	6	85,0	29,904	29,4	63, 2	25, 20	Clear, and somewhat hazy.
	6	88,0	29,903	33,0	63,95	25, 30	Clear, and hazy.
	6	88,2	29,958	32,2	63,75	25, 50	Hazy.
	6	85,0	29,966	28,5	63, 4	25, 36	Clear.
Sept.	6	82,2	29,987	21,9	63, 7	25, 48	Rain, and lightning. [ning.
	6	83,6	29,950	22,2	63, 5	25, 32	Cloudy, and some rain; thunder and light-
	6	82,5	29,937	21,9	64,45	25, 78	Rain from one art to one rise.
	6	81,6	29,912	17,2	63, 3	25, 32	Mostly hazy.
	6	81,9	29,898	22,3	63, 0	25, 50	Hazy.
	6	83,0	29,980	23,2	64, 0	25, 60	Mostly cloudy and rain.
Oct.	6	82,2	29,976	16,8	64,35	25, 74	Do. do.
Mean		85,1	29,924	22		25,374	

TABLE VI.

Experiments for ascertaining the Motion of Sound with a Gun placed on the Ramparts of Fort St. George.

Station at the top of the Madras Observatory House.

Month.	Day.	No. of Observations.	Morning or Evening.	Time.	Height of Barom.	Height of Therm.	Height of Hygrom.	Number of Beats.	Number of Seconds.	Wind.	Weather.
1820.				h.	Inch.	°	Day		°		
July	16	1	E	8	29,875	82,4	10	31,0	12,4	SE	Cloudy.
	17	1	»	8	29,870	83,2	14	31	12,4	SE	Hazy.
	18	1	M	5	29,845	79,8	10	33	13,2	NW	Cloudy.
		1	E	8	29,845	83,0	13	31	12,4	Light SE	Clear.
	19	1	M	5	29,870	79,8	12	29	12,8	Light NE	Cloudy, and rain.
		1	E	8	29,875	82,5	13	30	12,0	SE	Clear.
	20	1	E	8	29,878	82,0	14	30	12,0	SE	Do.
	21	1	E	8	29,900	82,0	14	31	12,4	SE	Cloudy.
	22	1	M	5	29,940	80,0	12	31	12,4	W	Do.
		1	E	8	29,925	80,4	15	30	12,0	Calm	Do.
	23	1	M	5	29,920	80,5	18	31	12,4	Land or W	Do.
		1	E	8	29,920	82,0	15	31	12,4	Calm	Do.
	24	1	M	5	29,920	80,0	14	31	12,4	W	Hazy.
		1	E	8	30,000	82,8	15	30	12,0	SE	Rain.
	25	1	M	5	29,935	80,2	14	32	12,8	Land	Cloudy.
		1	E	8	29,988	84,0	19	31	12,4	SE	Do.
	26	1	M	5	30,045	80,0	16	31	12,4	Light land	Hazy.
		1	E	8	30,040	85,0	20	31	12,4	W	Cloudy.
	27	1	M	5	30,050	82,2	20	30	12,0	W	Hazy.
		1	E	8	30,055	83,0	19	30	12	SE	Thin haze.
	28	1	M	5	30,055	80,7	15	31	12,4	W	Cloudy.
		1	E	8	30,025	81,0	9	30	12,0	Calm	Do.
	29	1	M	5	30,020	79,8	9	32	12,8	SE	Variable.
		1	E	8	30,020	79,8	7	31	12,4	SE	Cloudy.
	30	1	M	5	30,040	77,8	7	30	12,0	W	Clear.
		1	E	8	30,028	83,0	7	29	11,6	Fresh SE	Very clear.
	31	1	M	5	30,025	81,0	8	30	12,0	Light SW	Clear.
		1	E	8	30,000	81,7	10	30	12,0	SSE	Cloudy.
August	1	1	E	8	30,015	82,0	7	30	12,0	Light SE	Clear.
	2	1	E	8	30,000	81,0	5	33	12,0	Calm	Cloudy.
	3	1	M	5	30,020	80,2	4	30	12,0	W	Do.
		1	E	8	30,025	82,5	6	29	11,6	SE	Clear.
	4	1	»	8	30,015	81,5	8	30	12,0	SE	Do.
	5	1	M	5	30,020	80,0	7	29	11,6	Calm	Cloudy.
		1	E	8	29,075	82,0	7	29	11,6	SE	Clear.
	6	1	»	8	29,965	82,5	6	31	12,5	SW	Cloudy.
	7	1	M	5	30,006	80,5	9	30	12,0	Land	Do.
		1	E	8	30,015	81,0	8	30	12,0	Calm	Do.
	8	2	M	5	30,013	80,2	9	31,5	12,6	W	Do.
		2	E	8	29,945	81,0	10	31	12,4	W	Cloudy, and lightning.
	9	1	M	5	29,955	79,8	9	32	12,8	W	Cloudy.
		2	E	8	29,955	82,0	10	32	12,8	Fresh W	Cloudy, and thunder.

Table VI. continued.

Month.	Day.	No. of Observations.	Meridian of Evening Observation.	Hour.	Height of Barom.	Height of Therm.	Dry.	Number of Hygrom.	Number of Evapor.	Wind.	Weather.
1810.				h.	Inch.	°	Dry.				
Aug.	11	2	M	5	30,090	80,6	8	20,5	10,2	Light SW	Hazy.
		2	E	8	29,965	81,0	9	20,0	10,0	SE	Do. and lightning.
	12	2	M	5	29,974	81,2	5	21,0	11,4	W	Clear, and distant lightning.
		2	E	8	29,943	83,3	8	20,3	10,0	SE	Hazy, and do. do.
	13	2	M	5	30,009	81,4	7	20,3	10,2	Calm	Cloudy, and do.
		2	E	8	29,936	84,4	11	21,0	10,4	Light SW	Hazy.
	14	2	M	5	29,910	81,3	11	21,0	10,4	Do.	Cloudy, and lightning.
		2	E	8	29,906	84,0	11	20,3	11,8	Calm	Do.
	15	2	E	8	29,990	82	9	21,0	10,4	W	Hazy.
	16	2	E	8	29,962	84,3	12	20,6	10,0	SE	Cloudy.
	17	2	E	8	29,855	80,0	10	21,3	10,0	Land	Do.
	18	2	E	8	29,843	80,0	13	21	10,4	SW	Hazy.
	19	2	-	8	29,800	87,8	11	21	10,4	SW	Do.
	20	2	-	8	29,806	85,0	14	20,3	12,0	SE	Clear.
	21	2	M	5	29,900	83,0	14	21,0	10,4	W	Do.
		2	E	8	29,915	84,4	14	21,0	10,4	Fresh SE	Do.
	22	1	-	8	29,900	87,8	13	20,0	10,0	NW	Cloudy, and thunder to the eastward.
	24	1	M	5	29,906	83,0	15	20,3	10,0	Land	Cloudy.
	25	2	E	8	29,866	85,3	17	20,3	10,2	SE	Do.
	26	2	-	8	29,903	84,6	17	20,3	10,2	SE	Clear.
	27	2	-	8	29,882	86,9	19	20,3	10,2	SE	Do.
	28	1	M	5	29,966	88,5	10	21,0	10,4	W	Do.
		2	E	8	29,910	81,5	21	20,0	10,0	Light SE	Do.
	29	1	M	5	29,944	84,5	19	21	10,4	Land	Cloudy, and distant lightning.
		2	E	8	29,930	85,3	19	19,5	11,0	SE	Clear.
	30	2	E	-	29,963	81,5	19	19,5	11,0	SE	Do.
	31	2	E	-	29,950	85,5	17	21	10,4	ESE	Do.
Sept.	1	2	E	-	29,930	84,0	19	19,5	11,0	SE by E	Do.
	2	2	E	-	29,900	85,0	19	20,5	11,0	SE by E	Cloudy.
	3	1	M	5	29,973	81,5	18	20,0	10,0	WSW	Do.
		2	E	8	29,962	83,0	19	20,5	10,2	Light SW	Clear, and distant lightning.
	4	2	E	-	29,940	84,0	17	20,0	10,0	SE by S	Clear, do.
	5	1	M	5	29,970	84,0	15	20,0	10,0	W by S	Clear.
		2	E	8	29,963	83,0	15	20,5	10,2	SE by S	Clear, and distant lightning.
	6	2	E	-	29,970	82,5	19	21,0	10,4	Calm	Thin haze.
	7	2	E	-	29,965	84,4	15	20,0	10,0	SE	Haze.
	8	1	M	5	29,974	83,5	17	21,0	10,4	W by S	Hazy, and lightning.
		2	E	8	29,939	84,0	16	21,5	10,8	SE by S	Vivid lightning and thunder.
	9	1	E	-	29,950	83,5	16	20,0	10,0	SE by S	Clear.
	10	1	E	-	29,953	84,5	17	20,0	10,0	SSE	Clear, and vivid lightning and thunder.
	12	2	E	-	29,973	84,5	14	21,0	10,4	Light NE	Do. do. do.
	13	2	E	-	29,930	78,5	11	21,0	10,4	SE	Flying clouds.
	14	2	E	-	29,913	81,5	7	20,5	10,2	SE	Do.
	15	2	E	-	29,960	83,2	14	20,5	10,2	SE	Do.
	16	2	E	-	29,949	83,0	13	20,5	10,2	Light SE	Do.
	17	2	E	-	29,943	81,5	12	20,5	10,2	SE by E	Haze.

Table VI. *continued.*

Month.	Day.	No. of Observations.	Morning or Evening.	Hour.	Height of Barom.	Height of Therm.	Height of Hygrom.	Number of Deg.	Number of Seconds.	Wind.	Weather.
1805.				h.	Inch.	°	Dry.	°	″		
Sept.	28	1	E	8	29,910	63,0	12	51, 0	18, 4	Calm	Hazy.
	29	2	E	-	30,090	54,0	13	51, 2	17, 0	SE by E	Cloudy.
	30	2	E	-	30,080	56,0	13	51, 0	18, 4	Calm	Do.
	31	2	E	-	30,080	57,0	13	51, 0	18, 4	W by N	Do.
	32	2	E	-	30,098	53,5	14	51, 0	18, 4	SE by E	Hazy.
	33	2	E	-	30,050	50,0	93	50, 5	18, 0	Calm	Do.
	34	2	E	-	30,040	50,5	90	50, 5	18, 0	Do.	Clear.
	35	2	E	-	30,043	53,0	90	50, 5	18, 0	SE	Do.
	36	2	E	-	30,000	53,5	14	51, 0	18, 4	SE by E	Flying clouds.
	37	-	-	-	30,000	50,0	15	50, 2	18, 0	SE	Clear; some lightning.
	38	1	-	-	30,070	52,7	17	50, 0	18, 0	SW	Flying clouds; lightning.
	39	1	-	-	30,100	58,0	94	51, 0	17, 4	NW	Clear; lightning to the South.
	30	2	-	-	30,000	57,0	93	51, 5	18,52	Calm	Do.; do. to SW. quarter.
Oct.	1	-	-	-	30,010	50,5	19	50, 5	18,72	Do.	Do.; do. to the North.
	2	-	-	-	30,030	51,5	96	50, 7	17,96	Do.	Do.
	3	-	-	-	30,000	53,5	97	50, 5	18, 2	Do.	Do.
	4	2	-	-	30,145	53,0	95	50, 5	18, 0	SE	Hazy.
	5	1	-	-	30,040	54,0	19	50, 0	18, 0	Do.	Clear.
	6	1	-	-	30,050	56,5	18	50, 0	18, 0	SE by E	Flying clouds.
	7	-	-	-	30,000	53,0	90	50, 5	17, 8	SE	Cloudy.
	8	-	-	-	30,100	53,5	92	50, 0	18, 0	Do.	Clear.
	9	-	-	-	30,075	53,5	19	50, 0	18, 0	Do.	Do.
	10	-	-	-	30,075	53,5	90	50, 5	18, 2	Do.	Do.
	11	-	-	-	30,075	53,0	19	50, 0	18, 0	Do.	Do.
	12	-	-	-	30,050	53,5	91	50	18, 0	Do.	Do.; lightning to the South.
	13	-	-	-	30,050	53,0	89,5	50	18	NE by E	Do.
	14	-	-	-	30,080	53,0	92	50, 5	18, 2	NE	Do.
	15	-	-	-	30,100	53,5	91	51, 5	18, 6	E by S	Do.
	16	-	-	-	30,104	54,5	90,5	51, 0	18, 4	Light NE	Rather hazy.
	17	-	-	-	30,050	54,0	15,5	50, 5	18, 2	NE by N	Cloudy.
	18	-	-	-	30,000	57,0	8	51, 0	18, 6	NE	Rain.
							Damp				
	19	-	-	-	30,120	57,0	9	51, 0	18, 4	N	Hazy.
	20	-	-	-	30,090	58,0	9	50, 5	18, 2	NE by N	Clear.
	21	-	-	-	30,060	61,0	5,5	50, 0	18, 0	NNW	Cloudy; thunder and lightning.
	22	-	-	-	30,080	58,0	5,5	50, 0	18, 4	Calm	Clear.
							Dry.				
	23	-	-	-	30,110	60,5	7,5	50, 5	18, 6	Do.	Do.
	24	-	-	-	30,100	58,5	11	50, 0	18, 8	Do.	Do.
	25	2	-	-	30,120	60,0	13,5	50,50	18, 8	NE light	Do.
	26	1	-	-	30,130	59,8	11,5	51, 0	18, 6	NE	Cloudy.
	27	2	-	-	30,104	61,5	11,5	50,75	18, 2	NNE	Do.
							Damp				
	31	2	-	-	30,080	58,0	8	51	18, 4	NW	Hazy and clear.
Nov.	1	-	-	-	30,110	56,0	4	50, 5	18, 0	Calm	Clear; distant lightning in the SW.

TABLE VI. *continued.*

Month.	Day.	No. of Observations.	Morning or Evening.	Time.	Height of Barom.	Height of Therm.	Height of Hygrom.	Number of Beats.	Number of Seconds.	Wind.	Weather.
1803.				h.	Inch.	°	Dry.		°		
Nov.	3	2	E	8	30,125	82,5	4	30, 7	12,29	Calm	Clear.
	4	-	-	-	30,130	81,5	6	31, 5	12, 4	Do.	Do.
	5	-	-	-	30,138	82,0	10	31, 0	12, 4	ENE	Do.
	6	-	-	-	30,145	80,4	15	30, 5	12, 1	E	Do.
	7	1	M	5	30,170	77,4	11	31, 0	12, 4	S by E light	Do.
		2	E	8	30,172	79,0	15	30,75	12, 3	Calm	Do.
	8	1	M	5	30,188	76,0	12	30, 0	12, 0	Do.	Do.
		2	E	8	30,186	80,4	10	30,25	12, 1	Do.	Do.
	9	2	M	5	30,188	80,8	12,5	31,25	12, 5	NNW	Do.
		-	E	8	30,188	80,4	13	30, 5	12, 2	NNE	Do.
	10	-	M	5	30,178	79,6	11	30, 5	12, 2	NE	Do.
		2	E	8	30,178	82,0	11,5	30, 5	12, 2	Do.	Do.
	12	2	-	-	30,205	81,5	12,5	30,75	12, 3	E by N	Cloudy.
	13	-	-	-	30,365	78,5	8	30,75	12, 3	NE	Do.
	14	-	-	-	30,365	78,4	1,5	30, 5	12, 2	Do.	Clear.
	15	1	-	-	30,120	79,8	3	30, 0	12, 0	Do.	Cloudy.
	16	2	-	-	30,130	82,0	6	30, 0	12, 0	Do.	Clear.
	17	-	-	-	30,170	81,0	15	30, 5	12, 2	ENE	Rather hazy.
	18	-	-	-	30,190	80,0	3	30, 0	12, 0	NE	Cloudy.
	19	-	-	-	30,110	79,5	4	30,75	12, 3	NE	Clear.
	20	-	-	-	30,120	78,0	10	30,75	12, 3	ENE	Cloudy.
	21	-	-	-	30,085	78,5	8,5	30,25	12, 1	NNE	Clear.
	22	-	-	-	30,075	80,0	9	30,25	12, 2	NE	Do.
	23	-	-	-	30,110	78,5	12	30,75	12, 3	Do.	Do.
	24	-	-	-	30,145	78,8	13	30,75	12, 3	Do.	Do.
	25	-	-	-	30,110	78,5	10,5	31, 0	12, 4	NE by N	Do.
	27	-	-	-	30,150	79,0	14	31, 0	12, 4	ENE	Do.
	28	1	-	-	30,188	78,0	15	32	12, 8	NE	Do.
	29	2	-	-	30,230	78,0	19	31,25	12, 5	Do.	Cloudy.
							Damp				
Dec.	1	-	-	-	30,020	75,3	9	31, 5	12, 6	NNW	Clear.
	3	-	-	-	30,100	77,3	4	31, 0	12, 4	Calm	Do.
	6	-	-	-	30,088	78,5	6,5	30, 5	12, 2	ENE	Do.
	7	-	-	-	30,110	78,0	3	31, 0	12, 4	NE	Do.
							Dry.				
	8	-	-	-	30,100	77,8	6	30,75	12, 3	NNE	Do.
	10	-	-	-	30,120	77,8	8	31, 0	12, 4	NE	Do.
		-	M	5	30,115	76,0	4	31,25	12, 5	N	Do.
	11	-	E	8	30,115	76,0	12	31,25	12, 5	NNE	Do.
	12	-	M	5	30,078	75,0	3	31,25	12, 5	N & W light	Hazy.
		-	E	8	30,135	78,0	10	30, 5	12, 2	NE	Cloudy.
							Damp				
	14	1	M	5	30,074	77,0	1,5	31, 0	12, 4	Do.	Clear.
							Dry.				
		2	E	8	30,100	72,0	2	30,25	12, 1	E	Do.
	15	2	-	-	30,110	78,5	4,5	32, 5	12, 2	Do.	Do.

Table VI. *continued.*

Month.	Day.	No. of Observations.	Morning or Evening.	Time.	Heights of Barom.	Heights of Therm.	Heights of Hygrom.	Number of Beats.	Number of Seconds.	Wind.	Weather.
				h.	Inch.	°	Dry.		'		
1820. Dec.	10	1	M	5	30,090	78,0	1,0	39	18,0	E by S	Cloudy.
		2	E	8	30,125	79,5	8,5	31, 8	18,4	ENE	Clear.
	17	1	M	5	30,189	77,5	9	30, 5	18,9	NW light	Do.
		2	E	8	30,151	79,5	6,5	30,75	18,5	NE	Do.
	18	1	M	5	30,121	78,0	5	31, 0	18,4	NNE	Do.
	19	-	-	-	30,190	77,0	5	30, 5	18,8	NW	Clear and dew.
		-	E	8	30,112	79,5	15	30, 0	18,0	E by N	Hazy.
	93	-	-	-	30,045	78,7	7	31, 5	18,6	NE	Cloudy.
							Damp				
	94	-	-	-	30,150	80,0	1	30, 0	18,0	Do.	Clear.
	95	2	-	-	30,048	76,0	19	31, 0	18,4	Do.	Do.
	96	1	-	-	30,056	84,5	9	30, 5	18,5	E	Do.
	97	2	-	-	30,055	78,5	6	31, 0	18,4	ENE	Hazy.
							Dry.				
	98	2	-	-	29,975	78,5	9,5	30,75	18,7	Do.	Clear.
	99	1	-	-	30,110	79,5	3	31, 0	18,4	NE	Haze.
	30	2	-	-	30,050	78,0	8,5	31,03	18,5	Do.	Cloudy.
1821.							Damp				
Jan.	3	2	-	-	30,098	75,5	4	31, 5	18,6	Do.	Clear.
	4	1	M	5	30,020	74,0	4	32, 0	18,8	Do.	Do.
		-	E	8	30,060	75,5	0,5	31, 5	18,4	Do.	Do.
	5	-	M	5	30,100	76,0	4	31, 2	18,6	Do.	Hazy.
		-	E	9	30,110	77,5	2	30, 5	18,9	Do.	Clear.
	6	2	-	-	30,125	75,5	2,5	31,25	18,5	Do.	Do.
	7	-	-	-	30,130	77,5	7	31,25	18,5	Do.	Cloudy.
	8	-	-	-	30,160	76,5	7	31	18,4	NE	Clear.
	9	2	E	8	30,200	77,5	1	31	18,4	Calm	Do.
	10	1	M	5	30,200	75,5	1,5	31, 5	18,6	Do.	Do.
							Dry.				
		2	E	8	30,158	77,5	2	30,75	18,5	Do.	Do.
	11	1	M	5	30,200	74,0	1	31, 5	18,6	NW light	Do.
		2	E	8	30,210	78,5	7	31	18,4	NNE	Do.
	13	1	-	-	30,050	77,5	7	31	18,4	ENE	Do.
	14	2	-	-	30,000	77,5	9,5	31	18,4	Calm	Hazy.
	15	-	-	-	30,160	78,5	7,5	31,25	18,5	Light NE	Clear.
	16	1	M	5	30,150	78,5	6	30, 5	18,6	Calm	Do.
		2	E	8	30,160	77,5	9	30,75	18,2	Do.	Do.
	17	-	-	-	30,170	77,5	10	30,75	18,2	East	Do.
	18	1	M	5	30,200	76,5	8	30, 5	18,6	Calm	Do and dew.
	19	2	E	8	30,150	79,5	3	31,75	18,7	Do.	Cloudy.
	20	-	-	-	30,150	79,0	8	31	18,4	East	Do.
	21	1	M	5	30,130	76,5	8,5	31	18,4	NE	Clear.
		2	E	8	30,150	77,5	11,5	31,25	18,5	NE light	Do.
	22	2	-	-	30,150	79,0	8,5	32, 0	18,8	Do.	Do.
	23	-	-	-	30,190	78,5	11	30, 5	18,0	NE	Do.
	24	2	-	-	30,080	78,5	11,5	31, 0	18,4	Calm	Do.

Table VI. *continued.*

Month.	Day.	No. of Observations.	Morning or Evening Hour.	Thermometer.	Height of Barom.	Height of Thermom.	Number of Hygrom.	Number of Rain.	Number of Seconds.	Wind.	Weather.
				h.	Inch.	°	Dry.		″		
1821. Jan.	27	1	E	9	30,100	28,5	13	31, 6	14,8	NE	Hazy.
		1	M	5	30,130	27,0	13	31, 6	14,8	E	Clear, and dew.
	28	1	E	9	30,110	28,0	14,0	31, 6	14,4	NE	Hazy.
	29	1	M	5	30,110	26,5	9	30, 1	14,8	Calm	Flying clouds.
		1	E	9	30,110	28,0	9,0	31, 2	14,6	NE	Hazy.
	30	1	.	.	30,050	30,5	9,5	30, 6	14,5	NE	Clear.
	31	1	.	.	30,050	27,6	6	30, 3	14,9	NE light	Do.
	30	1	.	.	30,050	27,6	10	31,75	15,5	Calm	Do.
	31	.	.	.	29,970	27,5	8,5	30, 3	15,8	NE	Hazy.
Feb.	1	1	M	5	30,050	24,5	8,5	32	15,6	Calm	Do.
		1	E	9	30,000	27,5	10	30	15,0	E by S	Clear.
	2	.	.	.	30,000	27,5	12,5	30,75	12,5	NNE	Hazy.
	3	.	.	.	30,100	26,5	13	30,75	14,5	E	Clear.
	4	.	.	.	30,100	24,0	11,5	31,25	14,5	NE	Do.
							Damp				
	5	1	M	5	30,110	26,5	11	31, 5	15,5	Light NE	Clear.
		1	E	9	30,120	27,5	12	30, 5	14,5	East	Do.
	6	1	.	.	30,100	25,0	12	30, 5	15,0	Calm	Do.
		1	M	.	30,140	26,0	12,5	31, 5	15,5	Do.	Do.
	7	1	E	9	30,140	28,5	12,5	31,00	15,5	Do.	Do.
		1	M	5	30,130	28,0	12	30, 5	15,5	Do.	Do.
	8	1	E	9	30,140	24,5	12	30,75	15,5	Do.	Do.
		1	M	5	30,130	27,5	12	31, 0	15,4	NW	Do.
	9	1	E	9	30,110	28,5	12	31, 0	15,4	Calm	Do.
	10	1	.	.	30,200	30,0	12	31, 0	15,4	Do.	Do.
	11	.	.	.	30,000	30,0	12,5	31, 0	15,4	Light E	Do.
	12	.	.	.	30,010	27,0	12,0	30,75	14,5	NE	Do.
	13	.	.	.	30,100	28,5	12,5	31,25	15,5	ENE	Do.
		1	M	5	30,200	29,0	11	30, 0	15,0	NW	Thin haze.
	14	1	E	9	30,150	28,5	14	31, 5	15,5	NE	Clear.
	15	1	.	.	30,150	28,0	14	31,25	14,5	Calm	Do.
	16	.	.	.	30,200	28,0	11,5	31, 0	15,4	Do.	Do.
		1	M	5	30,160	25,5	13,0	30, 0	15,4	Do.	Do.
	17	1	E	9	30,150	29,0	14	31,25	14,7	Do.	Do.
	18	.	.	.	30,090	27,5	13	30,75	15,5	Do.	Do.
		1	M	5	30,150	25,5	14,5	30, 0	15,4	Do.	Do.
	19	1	E	9	30,080	28,5	14,5	31,25	14,5	SE	Do.
	20	.	.	.	30,150	27,0	13,5	30,75	15,0	Light SE	Do.
	21	.	.	.	30,150	25,5	14	30,75	14,5	SE	Do.
	22	.	.	.	30,110	28,5	14,5	31, 5	14,6	SE by E	Do.
	23	.	.	.	30,110	29,5	14,5	31,50	14,5	E by S	Do.
	24	.	.	.	30,140	30,0	14,5	30, 5	14,6	SE	Do.
	25	.	.	.	30,110	30,5	15,5	31, 0	14,4	SE by E	Do.
	26	.	.	.	30,100	31,5	14	31,25	14,5	SE	Do.
	27	1	.	.	30,060	33,5	14	30, 5	14,9	SE	Do.
	28	1	.	.	30,050	34,0	14	31, 0	14,4	SE	Do.

TABLE VI. *continued.*

Month.	Day.	No. of Observations.	Morning or Evening.	Time.	Height of Barom.	Height of Therm.	Height of Hygrom.	Number of Beats.	Number of Seconds.	Wind.	Weather.
1891.				h.	Inch.	°	Damp		°		
March	1	2	E	8	30,008	81, 5	16, 5	31,25	12, 5	SE	Clear.
	2	-	-	-	30,125	81, 5	15, 5	30, 5	12, 2	Calm	Do.
	3	-	-	-	30, 12	70, 2	17, 5	30, 5	12, 2	Do.	Do.
							Dry.				
	4	-	-	-	30,018	70, 2	19	30,75	12, 5	SE	Do.
	5	-	-	-	30,078	83, 2	18	30,75	12, 5	Do.	Do.
	6	-	-	-	30,140	70, 5	20	31, 0	12, 4	Do.	Do.
	7	-	-	-	30,125	83, 5	19	30, 5	12, 2	Do.	Do.
		1	M	5	30,125	75, 5	19	31, 0	12, 4	Do.	Do.
	8	2	E	8	30,215	81, 5	18, 5	31, 5	12, 6	Do.	Do.
	9	-	-	-	30,224	81, 0	14	31, 0	12, 4	Calm	Cloudy; lightning.
	10	-	-	-	30,085	80, 5	10	30,75	12, 3	Light SE	Cloudy.
	11	-	-	-	30,025	82, 0	12	31, 0	12, 4	SE	Clear.
	12	-	-	-	30,018	82, 0	12	30, 5	12, 2	SE	Do.
	13	-	-	-	30,038	82, 0	12	30,25	12, 1	SE	Do.
	14	-	-	-	30,120	83, 0	14	31, 5	12, 6	SSW	Do.
		1	M	5	30,100	81, 4	11, 5	31, 0	12, 4	SE	Do.
	15	2	E	8	30,110	83, 4	14	30,75	12, 3	SE	Do.
		1	M	5	30,175	81, 4	14	31	12, 4	Light SW	Do.
	16	2	E	8	29,998	81, 5	12	31, 0	12, 4	SE	Clear, and haze.
	17	-	-	-	29,988	81, 6	11	30,75	12, 3	SE by E	Cloudy.
	20	-	-	-	29,968	83, 5	12	31, 5	12, 6	S	Do.
	21	1	-	-	30,015	82, 8	11	31, 0	12, 4	SE	Clear.
	22	-	-	-	29,990	83, 0	11	31, 0	12, 4	Do.	Do.
	23	-	-	-	30,012	83, 0	12, 5	30, 5	12, 2	Do.	Do.
	24	2	-	-	30,015	83, 0	12, 5	30,75	12, 3	Do.	Do.
	25	-	-	-	30,100	83, 5	14	30,75	12, 3	Light ditto	Do.
	26	1	-	-	30,128	82, 4	15	30, 5	12, 2	Do.	Do.
	27	-	-	-	30,080	83, 0	18	30, 0	12, 0	Calm	Cloudy.
	28	-	-	-	30,085	83, 0	18	30, 0	12, 0	SE	Clear.
		Mean			30,065	80,47	11,35		12,305		

TABLE VII.

Experiments selected from Table VI. the Air having been Calm.

Month.	Day.	No. of Observations.	Morning or Evening.	Time.	Height of Barom.	Height of Therm.	Height of Hygrom.	Number of Beats.	Number of Seconds.	Weather.
1801.				h.	Inch.	°	Dry.		°	
July	20	1	E	8	29,925	80,4	15	30	12	Cloudy.
	21	-	-	-	29,920	82,0	15	31	12, 4	Do.
	22	-	-	-	30,025	81,0	8	30	12, 0	Do.
Aug.	3	-	-	-	30,000	81,0	5	30	12, 0	Do.
	5	1	M	5	30,030	80,0	7	29	11, 6	Do.
	7	-	E	8	30,015	81,0	11	30	12, 0	Do.
	13	2	M	5	30,000	81,1	7	30, 5	12, 2	Do.
	14	2	E	8	29,950	82,0	11	29, 5	11, 5	Do.; more rain, with lightning.
Sept.	6	2	-	-	29,920	82,0	12	31, 0	12, 4	Thin haze.
	18	1	-	-	30,010	83,0		31, 0	12, 4	Clear.
	20	2	-	-	30,030	82,0	13	31, 0	12, 4	Cloudy.
	22	2	-	-	30,050	80,0	21	30, 5	12, 2	Thick haze.
	23	2	-	-	30,088	85,5	22	30, 5	12, 2	Clear.
	30	-	-	-	30,070	87,0	22	31, 5	12,56	Do.; lightning SW. quarter.
Oct.	1	-	-	-	30,210	86,5	22	30, 5	12,56	Do.; lightning to the North.
	2	-	-	-	30,230	87,2	22	30, 7	12,28	Do.
	3	-	-	-	30,200	85,2	17	30, 5	12, 2	Do.
							Damp			
	11	1	-	-	30,088	80,0	1,5	31, 0	12, 4	Do.
							Dry.			
	15	-	-	-	30,122	80,8	7,5	31, 5	12, 6	Do.
	20	-	-	-	30,120	78,5	11	32, 0	12, 8	Do.
							Damp			
Nov.	1	2	-	-	30,135	82,0	4	30, 5	12, 2	Do.; distant lightning in the SW.
							Dry.			
	3	2	-	-	30,125	80,5	4	30,75	12, 3	Do.
	4	2	-	-	30,110	81,5	6	31, 5	12, 6	Do.
	7	2	-	-	30,172	79,0	13	30,75	12, 3	Do.
	8	1	M	5	30,188	76,0	12	30	12, 0	Do.
		2	E	8	30,180	80,4	10	30,25	12, 1	Do.
							Damp			
Dec.	5	2	-	-	30,100	77,2	4	31, 0	12, 4	Do.
1801.										
Jan.	8	-	-	-	30,205	77,5	1	31, 0	12, 4	Do.
	10	-	M	5	30,200	75,8	1,5	31, 5	12, 6	Do.
							Dry.			
		1	E	8	30,288	77,2	3	30,75	12, 3	Do.
	14	2	-	-	30,200	77,5	9,5	31	12, 4	Hazy.
	16	2	M	5	30,155	76,2	6	30, 5	12, 2	Clear.
		1	E	8	30,360	77,5	9	30,75	12, 3	Do.
	21	1	M	5	30,300	75,5	8	30, 5	12, 2	Clear, and dew.
	22	2	E	8	30,150	75,2	3	31,75	12, 7	Cloudy.
	24	2	-	-	30,080	78,5	11,5	31, 0	12, 4	Clear.
	27	1	M	5	30,115	76,5	9	30, 5	12, 2	Flying clouds.

Table VII. continued.

Month.	Day.	No. of Observations.	Morning or Evening.	Time.	Height of Barom.	Height of Therm.	Height of Hygrom.	Number of Beats.	Number of Seconds.	Weather.
1891.				h.	Inch.	°	Dry.		′	
Jan.	29	1	E	8	30,000	80,5	8, 5	30, 0	12, 0	Clear.
	30	2	-	-	30,030	77,8	12	31,25	12, 5	Do.
Feb.	1	1	M	5	29,909	74,5	8, 5	32, 0	12, 8	Hazy; dew.
	6	2	E	8	30,125	76,0	12	30, 5	12, 2	Clear.
		1	M	5	30,100	72,0	12, 5	31, 5	12, 6	Do.
	7	2	E	8	30,148	75,5	13, 5	31,25	12, 5	Do.
		1	M	5	30,175	73,0	12, 0	30, 5	12, 25	Do.
	8	2	E	8	30,145	74,5	27	30,75	12, 3	Do.
	9	-	-	-	30,145	72,5	23	31, 0	12, 4	Do.
	10	-	-	-	30,200	76,0	20, 0	31, 0	12, 4	Do.
	15	-	-	-	30,184	78,0	14	31,25	12, 5	Do.
	16	-	-	-	30,188	78,0	15, 5	31	12, 4	Do.
		1	M	5	30,188	75,5	13, 0	31	12, 4	Do.
	17	2	E	8	30,182	76,0	14, 0	31,75	12, 7	Do.
	18	2	-	-	30,092	77,8	15	30,75	12, 3	Do.
		1	M	5	30,165	75,5	14, 5	31, 0	12, 4	Do.
March	2	2	E	8	30,125	81,5	15, 5	30, 5	12, 2	Do.
	3	-	-	-	30,110	79,2	17, 5	30, 5	12, 2	Do.
	5	-	-	-	30,194	81,0	14	31, 0	12, 4	Cloudy and lightning.
	27	1	-	-	30,093	83,0	18	30, 0	12, 2	Cloudy.
		Mean			30,111	79,3	11,85		12,313	

TABLE VIII.

The Wind having been South-Easterly, mean of the Observations of three days.

Month.	No. of Observations.	Mean height of Barom.	Mean height of Therm.	Mean height of Hygrom.	Number of Beats.	Number of Seconds.	Weather.
		Inches.	°	Dry.		°	
	6	29,923	83,9	11, 3	30, 0	12, 0	
	6	29,927	85,0	15	30,63	12, 26	
	6	29,937	85,3	18, 3	30,15	12, 06	
	6	29,942	84,0	18, 3	30, 0	12, 0	
	6	29,955	84,4	17	30,35	12, 14	
	6	29,955	82,6	14	30, 5	12, 2	
	6	29,941	82,6	11, 3	30, 5	12, 2	
	6	30,008	83,2	14	31, 0	12, 4	
	6	30,086	84,5	17, 7	31,65	12, 26	
	6	30,025	77,5	9, 2	30, 3	12, 12	
	6	30,155	78,1	14	30, 9	12, 36	
	6	30,120	79,8	15, 8	31,05	12, 42	
	6	30,090	81,0	14, 3	31, 2	12, 04	
	6	30,063	80,3	17, 2	30, 9	12, 36	
	6	30,127	80,6	19, 2	31, 0	12, 4	
	6	30,043	81,5	11, 3	30,75	12, 3	
	6	30,055	82,3	12, 7	30, 7	12, 28	
	6	29,990	82,5	11, 8	32, 1	12, 44	
	4	30,084	83,5	15	30,37	12, 14	
Mean		30,023	82,3	14,60		12,231	

TABLE IX.

The Wind having been North-Easterly, mean of the Observations of three days.

Month.	No. of Observations.	Mean height of Barom.	Mean height of Therm.	Mean height of Hygrom.	Number of Beats.	Number of Seconds.	Weather.
1820.		Inches.	°	Dry.		°	
Oct.	6	30,132	81,3	12, 0	30,75	12, 3	Clear.
Nov.	6	30,181	80,7	11, 8	30, 5	12, 9	Do.
	6	30,178	79,8	7, 3	30, 7	12, 28	Cloudy.
	6	30,140	81,0	8, 7	30,15	12, 40	Do.
	6	30,105	78,2	7, 8	30, 6	12, 41	Clear.
	6	30,110	79,1	12, 3	30,35	12, 30	Do.
	6	30,173	78,5	14, 5	31, 1	12, 41	Do.
Dec.	6	30,119	78,1	1, 2	30,75	12, 3	Do.
	6	30,117	79,8	8, 0	31, 2	12, 43	Do.
	6	30,112	79,3	5, 0	30, 6	12, 24	Do.
	6	30,076	78,9	0, 5	30,65	12, 4	Do.
	6	30,083	78,9	2, 0	31, 0	12, 4	Cloudy.
				Damp.			
Jan.	6	30,105	76,1	4, 8	31,55	12, 54	Clear.
				Dry.			
	6	30,183	70,8	2, 5	31, 1	12, 41	Do.
	6	30,118	77,9	8, 6	31, 0	12, 4	Cloudy.
	6	30,119	78,5	10, 0	30,85	12, 31	Clear.
Feb.	6	30,103	77,8	11, 2	31,15	12, 46	Do.
	6	30,180	78,9	14, 2	30,75	12, 3	Do.
Mean		30,133	78,6	7,33		12,240	

TABLE X.

The Wind having been SW by W, and NW, mean of the Observations of three days.

Month.	No. of Observations.	Mean height of Barom.	Mean height of Therm.	Mean height of Hygrom.	Number of Beats.	Number of Seconds.	Weather.
1808.		Inch.	°	Dry.		°	
August	6	29,972	81, 0	9, 7	31, 5	12,60	Cloudy and lightning.
	6	29,974	86, 0	8, 0	30,85	12,34	Mostly hazy.
	6	29,915	85, 2	13, 3	31,15	12,46	Do. do.
	6	29,868	85, 4	18, 0	31, 0	12, 4	Cloudy.
Sept. and Nov.	6	30,074	82, 8	10, 9	31, 0	12, 4	Mostly cloudy.
Dec. and March	6	30,070	57, 7	3, 3	31, 4	12,56	Hazy.
Mean		29,979	84,85	11,81		12,46	

TABLE XI.

Mean Motion of Sound for each Month, according to the Experiments with the Mount Gun.

Month.	Mean height of Barom.	Mean height of Therm.	Mean height of Hygro.	Velocity in a second.
	Inches.	°	Dry.	Feet.
January	30,124	79,05	6, 2	1101
February	30,166	78,84	14,79	1117
March	30,072	80,50	18,99	1134
April	30,031	83,79	17,83	1145
May	29,892	88,31	20,82	1151
June	29,907	87,10	28,77	1157
July	29,914	86,68	27,85	1164
August	29,931	85,02	21,54	1163
September	29,963	84,09	18,97	1159
October	30,038	84,55	18,03	1128
November	30,123	81,35	8,18	1101
December	30,087	79,37	1,45	1099

J. GOLDINGHAM.

REPORT

OF THE

LENGTH OF THE PENDULUM

AT THE

EQUATOR,

BY

John Goldingham, Esq. F. R. S.

FROM EXPERIMENTS AND OBSERVATIONS

MADE ON

AN EXPEDITION

FITTED OUT UNDER HIS DIRECTION

FROM THE

OBSERVATORY AT MADRAS;

BY ORDER

OF THE

MADRAS GOVERNMENT,

IN THE YEAR 1821:

TOGETHER WITH A DEDUCTION

OF THE

FIGURE OF THE EARTH,

BY COMPARING

The Equator, Madras, and London,

EXPERIMENTS:

ALSO,

THE GEOGRAPHICAL SITUATION

OF

DIFFERENT PLACES

SEEN ON THE EXPEDITION;

WITH

PLANS AND VIEWS.

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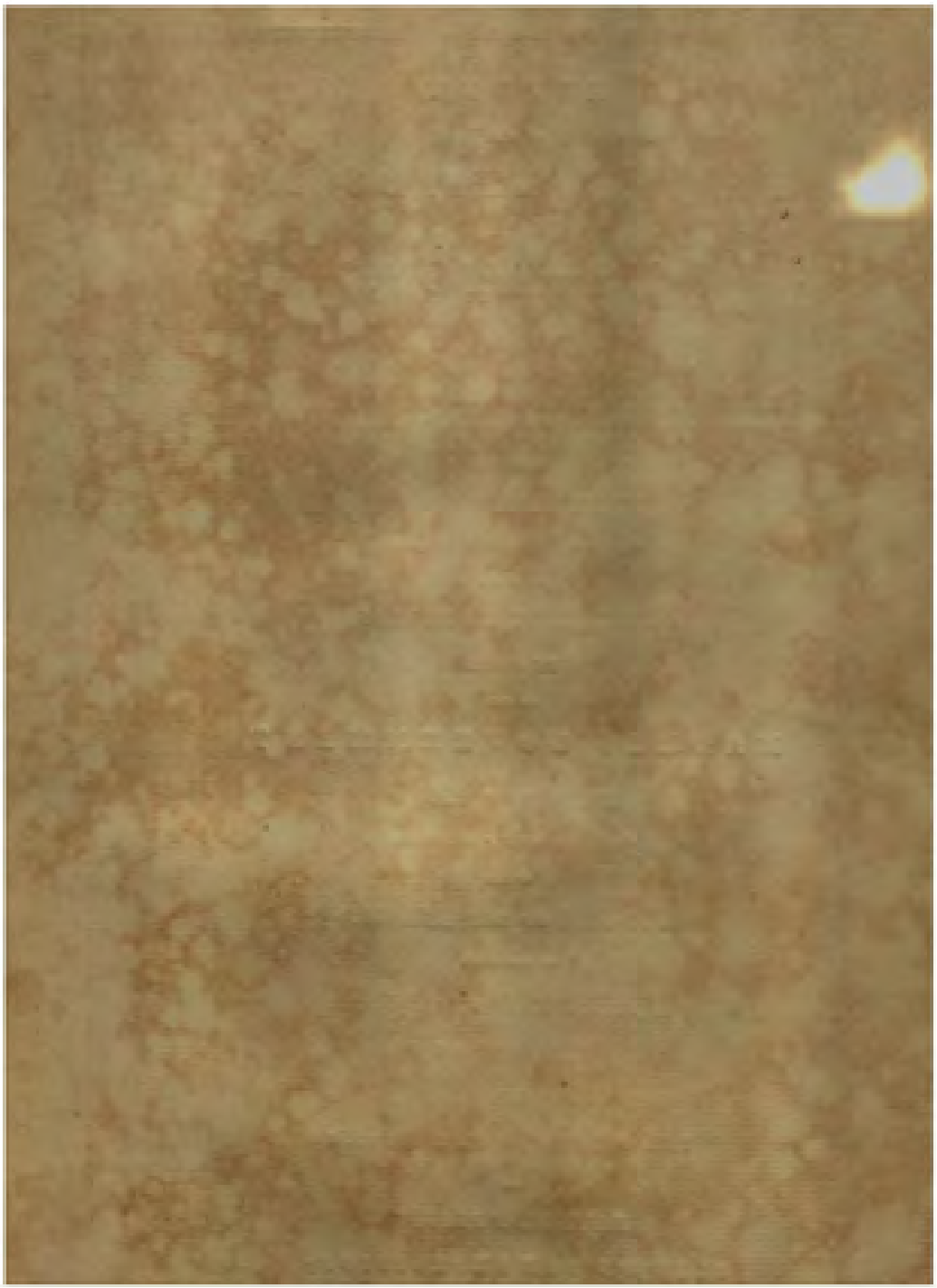

REPORT

OF THE

LENGTH OF THE PENDULUM

AT THE

EQUATOR.

By JOHN GOLDINGHAM, Esq. F. R. S.

In order to give the greatest possible value to the Experiments, which have lately been completed for ascertaining the Length of the Pendulum, and thence the Figure of the Earth; it was essential to have the Length of the Pendulum at the Equator, deduced from Experiments made with the same care, and with the same accurate description of Apparatus, as had been used in other parts of the World.

With a view to this Enquiry, and to make the Pendulum Apparatus, which I had received from England as useful as possible in this quarter of the Globe, I turned my attention towards discovering a good position upon the Equator, where to have the requisite Experiments made; being certain at the same time, that the Government of Madras,* whose aid I proposed to ask, would order every preparation to be completed, and every thing to be done, calculated to ensure the success of this interesting Enquiry: It appeared to me that some one of the Islands off the Western Coast of Sumatra, would furnish a good position, on which to make the necessary Experiments; and though personally unknown to Sir *Stamford Raffles*, the present Lieutenant Governor of Bencoolen, I felt no hesitation in addressing him upon the subject of affording us assistance.

The reply of Sir S. *Raffles* was such as I had anticipated—it was dated the 5th of September 1821; and the subjoined are Extracts from it:

"I have been much gratified by the receipt of your communication, and lose no time in assuring you of my most serious co-operation and assistance. There are several small Islands to the Southward of Nattal, many parts of which must lie on the Equator, and I think you may have a choice of situation.

"I lament to say that our geographical knowledge, even of the Coast, is most defective—with the exception of Acheen Head, and Bencoolen, and perhaps I let Point to the South, neither the Latitude or Longitude of any place along

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* At the time the Expedition was proposed and ordered, the Government consisted of
The Honorable Major General Sir Thomas Munro, K. C. B. Governor,
His Excellency General Sir Alexander Campbell, Bart. & K. C. B. Commander in Chief,
The Honorable George Sprottle, Esq. and
The Honorable William Thackeray, Esq.
} Members of the Council.
Fyn van Hooe, Esq. being Chief Secretary.

the whole line of Coast is laid down correctly: I am endeavouring to supply the deficiency, but I am in great want of scientific assistance and get on but slowly.—The Peggy Islands and Pole Nicholson are to be laid down not less than 15 miles to the Westward of their true situation, and the two Chimneys agree in the Longitude of the most Island to the Northward of Bencoolen—I mention this to order that your Observations may commence at Madras, and be brought us direct to Bencoolen.

"That the Party should come to Bencoolen, in the first instance, is indispensable also on many accounts; it will enable me personally to communicate with your Assistant, to give him such advice and information as may be necessary, and to supply the stores, instruments and personal guard that may be required.—The season for going from Bencoolen to the Northward will commence in April, and the season the Party arrive here after January the better; it is to be wished they should be at their station in March, in which case, should the weather prove unfavourable, and their object not to be otherwise accomplished, they will have the September change before them, and the command of both seasons.

"We have a regular station at Natal and Apia Bamphy, and also on Pole Pompey which lies directly off the latter, and would seem to be at the Equator.—Round Object is stated by Mr. Nairne to be 3 miles to the North of the Line, but in the maps it is as much to the South.

"I would recommend your making a double establishment of practical men, to supply casualties by sickness or otherwise; and I think your Party should be as complete in every respect as possible.

"They had better bring Tents (light ones of course), and a few Pioneers with their Axes would be found useful.

"A Watchmaker, Carpenter and Bricklayer can be furnished from Bencoolen—that is to say of the ordinary class.

"I should be very happy to find on the arrival of your Assistant, that we can mutually agree upon some general plan, which shall include not only the Experiments on the Pendulum, but the general Geography of the Island, to which my attention has long been directed—and at events he will be under the necessity of taking Observations for laying down some positions with accuracy, and thus will be so many points gained in Geography.

"The Party should be most complete in Instruments—they must not rely on finding any, even the commonest, here."

Another Letter from *Sir Stamford Raffles* of the 12th of December following, expresses the same warm interest respecting the projected Expedition, with the same promises of assistance.

Immediately upon the receipt of the first of these Letters, I waited upon *The Governor* Sir Thomas Munro, and stated the Object I had in view—mentioning at the same time, the promised assistance, and the information I had received, from *Sir Stamford Raffles*. As I had expected, Sir Thomas Munro was pleased to enter cordially into the Objects of the Plan; and I immediately addressed a Public Letter to the Government upon the subject—of which the subjoined are Extracts.

"It is known to *The Honorable* the Governor in Council, that some of the principal Governments in Europe, have lately employed eminent scientific men in determining the Length of the Pendulum, for establishing a standard measure, and for ascertaining the Figure of the Earth; and in this interesting enquiry, that *Great Britain* has stood in the foremost rank—sparing no expense that appeared to me, the smallest, degree necessary, for obtaining the most accurate results.

"In a former communication, I had the honor to state, that I had written to the Gentleman employed by the British Government to superintend the operations in England, who was a friend of mine, to procure for me, and send out, an Apparatus for measuring the Length of the Pendulum, similar to that used by himself; and that he had most readily done so; the one which has been made of this Apparatus here, is fully known to *The Honorable* THE GOVERNOR *in Council*.

"In order to compare and combine the Observations for the Length of the Pendulum taken in different Latitudes, in a manner to render such Observations of the greatest value, it would be most desirable to have accurate Observations taken at the Equator, and a very favourable opportunity for obtaining such Observations, now presents itself.

"A part of the Island of Sumatra, which is under the influence of *The Honorable* Company's Government, is crossed by the Equator, and offers a most eligible Station for these Operations; added to which, Sir Stamford Raffles, the Lieutenant Governor of Bencoolen at present, as he informs me, is desirous of affording me "every cooperation and assistance."

"I therefore beg to submit for the consideration of *The Honorable* THE GOVERNOR *in Council*, that persons to be properly instructed in the use of the Pendulum Apparatus, and qualified to make all the necessary Observations, may be sent to Sumatra, under my direction, to collect, and transmit to the Observatory as collected, the valuable and desirable data, requisite for finding the Length of the Pendulum at the Equator; the most difficult part of the Calculations may be made, and the Conclusions drawn here by myself.

"Messrs. Peter Lawrence and John Robinson, who were brought up at the *Honorable Company's* Surveying School formerly under my superintendance, would be ably, with some instruction, to perform this duty—the former was many years under Colonel Lambton, the Superintendent of the Great Trigonometrical Operations carrying on in this part of the World; the latter was originally qualified to act as Assistant at the Observatory, and was here at the Surveying School; but having my absence in England, he was directed to the Pilotage, and is now I understand employed in the Tide Department at Chittagong, but as another Surveyor is there, I have little doubt, he can be spared for this Service, which may be considered only of a temporary nature.—The monthly Salary of these Assistants, might not exceed 175 Rupees. A trusty and steady Confidential Native Servant who has the Property, and a Safe Conductor of the same character, under him, with a proportion of good Lascars, would be necessary; together with Tents—including one for an Observatory.

"The Pendulum Apparatus we have—a Clock might be spared for a time from the Observatory for this occasion—with the Chronometer, the loan of two other Chronometers may possibly be obtained, or two may be purchased—Sextants and Artificial Horizons may also be taken from the Observatory, with a Telescope and a Portable Transit Instrument: a Barometer and some smaller Articles must be purchased, and Instalment and remaining Rate to make up to the sum of such Surveying Instruments as may be required can be obtained, from one or more of the Public Offices, where such are in store. By this Arrangement the expense will be as limited as possible: and I have no doubt, that future and no inconsiderable expense will be saved, by the Geographical information, which will be collected during the Operations, and which is now extremely required by Sir T. S. Raffles, the Assistants may be instructed to make an opportunity of observing: points most accurately be established, and that in the most accurate manner, from which those employed in the necessary operations of Surveying, may at all times take a departure.—Sir T. S. Raffles in a communication to me, observes, "I learned to my great astonishment, on the Coast, in most deficient—with the exception of Arlem Head, and Bencoolen, and perhaps Fort Marlborough to the South, neither the Latitude or Longitude of any place along the whole line of Coast is laid down correctly; I am endeavouring to supply the deficiency, but I am in great want of scientific assistance and get on but slowly—The Pulo Nias appear to be laid down not less than 40 miles to the Westward of their true situation, and on two Charts agree in the Longitude of the same Island to the

Northward of Benevolen.—I mention this in order that your Observations may commence at Madras, and be brought on direct to Benevolen." The reason, Sir S. Raffles observes, the Party are at Benevolen "after January the latter"—and opportunities it is probable may occur for sending them on a Vessel bound to that place.

"Should *The Honorable* THE GOVERNOR *in Council* be pleased to direct these Operations to be performed, I can prepare the Assistants for the execution of the Duty, and frame detailed Instructions for their guidance—A List of the Articles required for the Expedition, can also be submitted for Approval."

This letter was dated the 6th of November 1821, and a most gratifying Reply was received to it on the 10th of the same month—of which the subjoined are Extracts.

"I am directed to acknowledge the receipt of your Letter of the 8th instant, and to state, that *The Honorable* THE GOVERNOR *in Council* fully sensible of the importance which is to be attached to the Observations you are desirous should be made at the Equator, will be happy to afford every possible assistance to the prosecution of Researches which are calculated to prove so eminently valuable to general Science.

"Instructions will accordingly be immediately issued for the two present Messrs. John Robinson and P. Lawrence, whom you consider to be calculated to conduct the desired Enquiry, to be placed under your superintendence, in order that they might receive that Instruction which it is your intention to give them, to ensure the correctness of the Observations, which they will be entrusted to make—Orders will also be given for the selection of a Conductor and Sub-Conductor, whose characters for steadiness, render them fit to take charge of the Property, and when you shall have stated the number of Lascars, and the extent and description of the establishment of Tents that it may be necessary to assign to the Party, directions will also be communicated for their being furnished with them.

"With respect to the number and nature of the Instruments and other Articles that it may be necessary to provide on the occasion, *The Honorable* THE GOVERNOR *in Council* will be prepared to sanction your Indent for all such as are to be procured from the Public Stores, and feeling confident that you will confine the expense to be incurred within as narrow limits as may be practicable, he will authorize any Expenditure which you may make in the provision of those which can only be supplied by purchase.

"The Marine Board will be instructed to report whenever an opportunity may offer for the departure of the Party for Benevolen."

The Preparations were immediately commenced at the Observatory, and completed claim the close of the year; the additional Instruments were obtained, either from Officers where such were in store, or purchased; the difficulty and trouble in a Country like this, attendant upon fitting out an Expedition of this description, and in having delicate Instruments properly packed, may readily be imagined*—these difficulties however were successfully overcome; and the two Assistants, Messrs. Robinson and Lawrence, were instructed and practised in the Duty they had to perform. I expected that an Officer with a Guard, would have been ordered by *Sir Stamford Raffles* to go with the Party from Benevolen, but it having been suggested to me, that it might be better to despatch an Officer from hence—and concurring in this suggestion—I addressed the Secretary to Government in the Public Department, upon the subject, under date the 19th of December, stating—

* The Correspondence, which this involved, and which out of some bulk, has been omitted, as tending unnecessarily to increase the length of the Report.

"That it having been suggested to me, if an Officer were sent with the Party going to the Equator, it might be of service to him, and that Affiliation might possibly occur which persons, merely scientific, could not so readily overcome, I begged he would be pleased to submit for the consideration of *The Honorable* THE GOVERNOR in Council, whether it might not be desirable to have this addition to the Party.—That we had as much Science engaged I imagined as could be required; it was therefore not essential that any gentleman who might go should have had a regular scientific education—a general knowledge of the objects of the Expedition merely, with the habit of overcoming difficulties which would occur to him in the Field, and a power of command to keep all proceeding with it in due order, would be sufficient for the purpose."

The Honorable THE GOVERNOR *in Council* was pleased to adopt this suggestion, and to appoint *Captain* CRAIG *of the Army of this Presidency* for the Service—that Officer also to be employed, when attending at the Observatory, to obtain information as to the mode of using the Pendulum Apparatus.

THE FOLLOWING

IS A LIST OF THE INSTRUMENTS AND ARTICLES

SENT WITH THE EXPEDITION.

1 Astronomical Clock, *Graham Pendulum.*

1 Pendulum of *Experiment*, with Frame for suspending it—Jar of Vibration and small Telescope.

2 Thermometers for Do.

3 Pocket Chronometers—viz. No. 291 and 307, by Arnold—and a Gold one, by Earnshaw.

2 Sextants—one with a Shield.

2 Artificial Horizons with Glass covers—Quicksilver for the same.

1 Large Telescope by Dollond with Stand—for Eclipses of the Satellites of Jupiter.

1 Portable Transit Instrument, with Circular Wooden Stand.

1 Theodolite and Stand,
1 Circumferentor and Stand, } Quilted Wax Cloth Covers for these Instruments.

1 Azimuth Compass,

1 Hand Telescope, by Dollond,

1 Barometer,

1 Large Pocketsextant.

1 Brass Chain 100 feet.

1 Hygrometer.

2 Levelling Staves 10 feet each, with Vanes.

1 Plank for fixing the Clock, 6 feet 7 inches long, by 1 foot 4 inches broad and 2¼ inches thick—6 Plugs and Screws for fixing the same to the Pillar.

12 Circular Plugs for fixing the Frame for suspending the Pendulum of Experiment.

1 Triangular Stand for the Barometer.

1 Stand for the Jar for measuring the Vibrations.

1 Stand for the small Telescope.

A Canvas Observatory—Camp Table, and Stools.

9 Magnifying Glasses.

1 Set of (4) Shaded Glasses.

1 Case of Mathematical Instruments.

1 Parallel Ruler.
1 Gunter's Scale.
1 Colour Box, Indian Ink and Brushes.
Nautical Almanacs for 1821 and 1822.
2 Madras Almanacs for 1823.
Book of Requisite Tables.
Norie's Nautical Tables.
Refined Oil for the Clock and Pendulum.
Bamboos and Flags for Signals.
Steps to mount to the Frame of the Pendulum.
Black Paper for the Ball of the Clock Pendulum—Hair Powder for Paste.
2 Chamois Leather Skins for cleaning the Glasses of the Instruments.
1 Office Tent,
2 Subalterns Tents,
2 Necessary Tents,
2 Baggage Tents,
1 Linnen Tent,
} With Sheet Ropes, Pins, &c. complete.
1 Large Magazine Tarpaulin.
With Hatchets, Bill Hooks, Pickaxes, Plumb Lines, Rope and Line of different descriptions, Cleets, Nails, Screw Drivers, Drills, and sundry smaller Tools and Articles.
Stationary—an ample supply, including Blank Books.
10 Dozen of Wax Candles.
40 Measures of Oil—Candlesticks, Lamps and Lanthorns.

Also a proper supply of *Medicines*—and Directions for using the same.

These *Instruments* and *Articles* were carefully packed in 23 Cases—and arrived quite uninjured at the ultimate destination of the Expedition.

The following *Instructions*, approved by the Government, were furnished by me for the guidance of the Party. I was the more particular in these *Instructions*, as the Service was now to those going upon it, and to prevent as far as possible, any interruption, from a want of the requisite information.

INSTRUCTIONS.

"The primary object of the Expedition is to make the requisite Experiments and Observations for ascertaining the *Length of the Pendulum at the Equator*, to combine with Observations which have been made at Madras, and in other parts of the Earth: with this, other objects are not to be allowed to interfere; though opportunities will doubtless occur on the passage to Bencoolen, and from that place to the Equator, and on the return voyage to Madras, for obtaining much valuable nautical information; and no such opportunities should be allowed to escape.

"The Party will first proceed to Bencoolen, where *Sir Stamford Raffles* has promised to furnish any additional assistance that may be required—a Vessel to proceed to the Equator, a Guard, Materials (Bricks and Lime) and a Bricklayer or two to build a Pillar, to which to fix the Clock, two Carpenters, and Provisions, comprise the principal assistance wanted. A Watchmaker to put up the Clock, may be required—but it will be better, if possible, to do without one.

"On arriving at Bencoolen, Observations should be taken for the Time, for the purpose of obtaining the difference of Longitude between Madras and that Place; these Observations should be continued for the Rates of the Chronometers, and a fresh departure taken from Bencoolen for the Longitude of the Place where the Experiments with the Pendulum are to be made—Observations should also be taken for the Latitude of Bencoolen—the Variation of the Compass, and if possible, the rise and fall of the Tide, with the time of high water at the full and change.

"In selecting a Station at the Equator, care should be taken, that it be as far as possible out of the sphere of the attraction of Mountains, and close to the sea—a small healthy Island at a moderate distance from the main land, would be a most desirable place for a Station. According to the accompanying sketch No. 1, there is an Island (Sala) on the Equator—this however is a long way out, and unless there be a post on Pu. Pinjin, it may be at an inconvenient distance from the Sumatra shore—some healthy Island may probably be met with nearer the Coast.

"Having found the Equator by Observation, the Pillar is to be erected upon it* (vide Plan and Elevation). The face should be perfectly flat and upright—and should from the opposite part of the horizon to that the Wind of the Season blows from—if it be the S. W. Monsoon, for example, the face of the Pillar should be to the N. E.—while the Pillar is building, the Plugs of Wood for fixing the Frame, which is to support the Pendulum of Experiment, should be inserted, exactly in the proper places, as well as the Plugs for fixing the Plank to which the Clock is to be attached; small pieces of wood should also be placed in the projecting part of the Pillar on which the Clock, and the Stand for the Arc for measuring the Vibrations of the Pendulum of Experiment, are to rest; to these pieces of wood, is to be screwed, the Stand just mentioned.—When the Pillar shall have properly settled, and become sufficiently dry, the Curtain Observatory may be placed over it, the Stand fronting the face of the Pillar, and the face of the Pillar about two feet behind the ridge Pole; the whole of the Pillar to be across the left side of the Tree, than the right side (vide Plan). The Plank should be properly secured and perpendicular to the horizon.—The Plank being fixed, the

* The Pillar is to be commenced as early as practicable, and to be kept from Rain by a Tarpaulin—the object being to have it as dry as possible before the Clock and Frame are put up. It is not to be planned, so that would keep it out a very long time—[illegible] Cement that will soon set, to be made use of, if to be obtained—as little water as possible to be used in either the Cement and [illegible] the Bricks.

Clock may be moved to it, which should be done in the most exact manner.—The Pendulum to be high every way, as at the Observatory, and the Works of the Clock the same; the Axis for suspending the Pendulum, and the guide in placing the Pendulum, the point of which should stand 1 division to the right of ℄, and 6,25 of an inch in front of the Axis; by having the face of the Pillar upright and flat in the first instance, the Plugs as placed in it, that the Pivot shall also be upright and rest against the face of the Pillar, the Clock will be easily and freely restored to the position mentioned. The projecting part of the Pillar on which the bottom of the Clock Case stands, should be perfectly level. The Pendulum of the Clock is first to be put up, and then the Weights. If the Clock Paper and Dial should have been raised off; the foot of the Pendulum is to be screwed again, and a fresh Dial put upon the Centre of the Ball. The Clock should have been going 24 hours at least, before you begin to ascertain the time—get it to go as small a rate as you can without losing too much time.

The Frame for supporting the Pendulum of Experiment may now be screwed. At the Observatory I was obliged to let the back of the Frame 8½ inches in the wall;—the surface of the Plugs having been 14 ½ beyond the surface of the wall, exactly that quantity; but the Clock was then placed against the wall; here, there will be a plank, which is exactly 2½ inches in thickness, so that the surface of the Plugs should be let in only 11 inch, till the Front of the Pillar, where the Frame is to be placed, was away to that depth. Care should be taken that the Frame is put up as first as that the top of it shall be as nearly level as possible; and at such an height, that when the small Frame with the Agates is also put up, the point of the Pendulum shall just come to the Division of the Arc for measuring the Vibrations; and also, that the middle of the black slip at the lower part of the Pendulum, shall be as nearly as possible opposite the centre of the Bar.

The large Frame being levelled by the spirit level, put up the smaller Frame containing the Agates—let this be most accurately levelled; screw up the Ys, and put up the Pendulum of Experiment, with the knife edges in the Ys, having first wiped the knife edges with a piece of cloth, or flannel, saturated with fine oil.—This should be done before the Observations are commenced, and after finishing them: the knife edges are always to rest in the Ys, when the Pendulum is not used, but to be let down on the Agates, when the Experiments are making.

The small Telescope is to be placed at such a distance from the Pendulum, that the sides of the black slip at the bottom of the Pendulum, shall just be embraced by the sides of the perpendicular opening in the diaphragm. Large Pickers with flat tops may be driven into the ground at the proper distance, and the bottom of the exception used supporting the Telescope be screwed to them—the Telescope being kept at the same height as it is to the Observatory—if a brick foundation may be laid with Pickers let in. The Telescope must be laid horizontally, until the left edge of the diaphragm becomes a tangent to the edge of the Bar on the same side, and a thick mark be made to show the position of the Telescope to the left; move the Telescope to the right, until the other side of the diaphragm is a tangent to the part of the Bar on the right, here make a mark also, bisect the distance of the two marks, and place the Telescope half way between.

The following is the mode of making the Experiments.—The Barometer being up, and the Thermometer hung near the middle of the Pendulum; lower the knife edges gently upon the Agates; adjust the perpendicular sides of the diaphragm, most accurately to the edges of the black slip, by the screws in the lower part of the support, then bring the

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* Many minor Instructions may also be added for putting up the Works and Pendulum of the Clock—to make the Key independent of apparatus in the guard for Observation.

† Lead is placed between the joints of the Frame, so that while the pendulum of the Lever, it may be lowered, and the Frame thus brought into bed; it should however be made as nearly level as possible by the Workmen when putting it up.

0 on the Arc, to coincide exactly with the angular point of the Pendulum. With the fleetinger of the right hand upon the edge of the black slip of the Pendulum, bring the point to about 1,3 upon the Arc for measuring the Vibrations, and on the left of 0; an instant before the Pendulum of the Clock comes to its greatest height on the same side, withdraw the finger horizontally; take the height of the Thermometer and Barometer, which register, look through the Telescope, an Assistant counting the Clock, note the second and parts of a second, when the Disc is completely hid behind the black slip of the Pendulum—also the instant when it re-appears—let the exact time, minutes, seconds and tenths, of both, be registered, and the steak taken. Immediately after the second Observation (the re-appearance of the edge of the Disc) take the Arc of Vibration very carefully, by testing how much the Pendulum vibrates on each side of 0, which also register: In about 11 or 12 minutes, the Disc will again coincide with the Pendulum—the times of the same appearances as above, must be noted and registered; and thus proceed, until five more coincidences are obtained, (as in the Form). The Thermometer being observed at the beginning, at the 2d and 5th coincidences, and the Barometer at the beginning and end of each set. The Pendulum should now be gently stopped, by putting the hands in the sides of the weight, and a new set of Experiments commenced as above: perhaps 8 sets, 4 in the morning and 4 in the afternoon may be taken in a day; the Names of the Observers to be noted; and each person's Observations to be kept distinct. The foremen sets being done, screw up the Ys, so that the knife edges may rest on them, lift the Pendulum gently up and wipe the knife edges with the oiled cloth as formed, and place it again with great care in the Ys, covering the whole with a Cloth to keep off dust and damp; Before the afternoon's Observations, wipe the knife edges, and lower them upon the Agates very carefully—should there not be light enough in the Observatory Tent, the top may be opened; but great care should be taken to exclude wind from the Pendulum during the time of making the Experiments, on this account the face of the Pillar and the opening are placed on the side opposite to the prevailing wind.

Three distinct sets of Observations, of 100 or 120 Observations in each set, should be taken if possible. The Frame with the Agates to be examined and levelled between each set, and the other points of adjustment also to be examined.

During the time of making the Experiments the rate of the Clock must be correctly ascertained, both by the Stars and the Sun—and all the Observations carefully registered. A small Pillar may be built for the Transit Instrument, sufficiently to the right in the Observatory, not to obstruct the view of the Pendulum through the Telescope, but so as to take advantage of the opening in the top of the Observatory, for taking the Transits.

Meridian Altitudes of the Sun, if not too high for the Artificial Horizon, and of Stars on each side of the Zenith, should be observed; the more numerous these Observations are the better—as a Result to the nearest second is required.

The Longitudes must be found by the Chronometers, and Eclipses of the Satellites of Jupiter.

The nearer the place of Observation is to the Sea the better; the height of the Pendulum above the Sea must be found by levelling—also the rise and fall of the Tide—The time of High Water on full and change; The Variation of the Compass, the Bearings and Distances of the different Mountains, their Extent and Elevation nearly, and if known, to state what they are composed of; also the Bearings and Distances of Islands, and parts of the Coast—and particularly the nature of the Soil, of the place on which the Experiments are made; whether Sandy or Mould, or Rocky, if either of the two former, whether to any Depth.

Every opportunity is to be taken, for finding the bearings and distances of places and points along the Coasts which may be in sight; with the difference of Latitude and difference of Longitude; also for obtaining Soundings, as well as the set of the Currents, as shewn by the Chronometers and Meridian Observations, to lay the Foundation for a Nautical Survey, and for the improvement of Nautical Science; the Variation of the Compass should also be found as often as

possible; the Eye Line should be accurately marked, as on its true vertical distance the Scale, and the Value of the Intervals.

The Article of all the Observations, Experiments and Events to be noted in the Observatory, by Mr. Galling from the Assistant, by every opportunity.

Journals among every Commissioner that may be thought useful or interesting, should be kept; both Talisman and Lieutenant, may each also be directed to keep a Journal.*

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* Determination of the Points to be attended to.—The Frame with the Agates to be accurately levelled.

In taking the Prediction of Experiment out of the Case, the question upon should be observed and be heard it:—The bubble edges to be wiped with an moist cloth at the beginning and at the end of the Experiments.—The bubble edges always to rest in the Y, when the Prediction is read, but to be let down on the Agates previously to making the Observations.

The Point of the Prediction of Experiment not to be placed beyond 1.31 on the Axis of Y therefore before the Prediction is set going, as then the Axis of Y therefore of the Scale alone may not be much above, nor much less, than 1.*

The Cock to be freely moved, and quite upright; the Frame for supporting the Prediction of Experiment also to be freely moved; and to have been made by gradual the Axis of the Cock Case to show the position the Prediction ought to be brought to.

Should the Cock or the Axis, either up, or shorten, the Prediction, as many Divisions of the Axis as the Leaves of X, as the Cock have moved, to be noted.—Should it go too far, lengthen the Prediction, as shown by means of the Nut.

The Cock to be moved up once a week.

The Commissioner to be moved up at the same hour every day.—one person to be specially appointed to do this.

In taking the Latitude.—take them on each side of the Zenith.

Equal Altitudes the best mode of taking the Time, though in succession sometimes, it will do as well to take Single Altitudes, before previously, a. m. or after P. m.

On the Days of Experiment it is absolutely necessary to have the rate of the Clock, this may be found both by the Sun, and with the Transit Instrument by the Stars.

In taking Bearings, as Flag Staff, use the Azimuth Compass.—Give the Compass, in taking a Bearing of the Ship's one by the Log Line a given time.

In taking the Meridian Altitude of a Star compute the exact time by the Chronometer when the Star passes, use the Tube in the Artificial Meridian Altitude nearly; and take the same in the natural, when, by the Chronometer, the Star is on the Meridian.

Of the Surface Telescopes.—always use that with the largest magnifying power.—placing the Wires parallel to the Axis of the Earth.

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* The value of these divisions is not exactly a decimal portion, but it will be found quite near enough for practice.

ment, and observing to the Centre of the Telescope. A wire or Telescope must be inserted the line of the Instrument for Observations of the Stars at Two the Sun, the middle of the Object Glass of the Telescope, should be placed opposite the middle of the uppermost pair of the horizon glass. Find the Time of the Stars as the above after is to mark. The horizontal distance of the Sun should be taken for this purpose, if the Sun be low.—

Form for registering the Experiments with the Pendulum.

April 5—1—n. Pendu.

Rate of the Clock. *Thermometer.* Barometer { Beginning—30,179 / End——30,151

By the ☉. By the ☆. 54,3 deg.

Difference Time	Time Vib.	Diff. of Vib.	Arc of Vibration	Remarks
″	′ ″	′ ″		
41,79	11 15,1	41 54	1,38	
	10 33,3	10 31	1,39	
53,3	5 42	5 42,1	1,14	
	47 10	47 9,3	1,08	
32,87	33 9,1	33 33,3	0,98	

The object is here the Experiments for to of the Observatory, before the Expedition sailed.

Nothing was denied, that a liberal and enlightened Government, in this distant quarter of the Globe could raise to be supplied;—and the Expedition now only waited the arrival of a Company's Cruiser—two of which had been placed, for a particular service, under the orders of *His Excellency* Sir Henry Blackwood, the *Admiral of the Station*, and one of these was to have been spared, for a short time, to carry the Party to Bencoolen.

About the beginning of March, finding the Cruiser did not arrive,* and that a good opportunity offered for sending the Expedition on the Ship *Morning Star*, I addressed Government—stating that as the Season for going to the Northward from Bencoolen had commenced, it would be most desirable if the Party could proceed to that place without further delay—and as there was no doubt whether the expected Cruiser would call here in time, or even at all, I proposed for the consideration of *The Honorable* The Governor *in Council*, that the Expedition should proceed on the Ship before mentioned—this was ordered immediately, and the Party† embarked in the *Morning Star* on the 13th of March—the Instruments and Baggage having been sent on board the day before.

The following Brief Account of the Proceedings,
is founded upon the Diaries kept at the time.

After a passage of 34 days, the *Morning Star* arrived in Bencoolen Roads. On the 18th of April, the Party landed at Fort Marlboro' with the Instruments and Baggage—Captain Crisp and his Family were lodged by Sir Stamford Raffles to reside at the Government House. The Observers Messrs. Robinson and Lawrence and the Conductor and Sub Conductor were accommodated with rooms in the lower story of the old Government House until the 1st of May, when

* It is fortunate we did not wait longer for her, as she proceeded direct to Bengal.

† The *Party* consisted of
Captain Crisp, in Command.
Messrs. { John Robinson, / Peter Lawrence, } Observers. Mr. Hamilton, *Conductor of Stores.*
Mr. Flannigan, *Sub Conductor.*
One Servant Waited and also Lascars

they removed into Tents about 900 feet N. E. of the House—The Lascars obtained their provisions from the Public Stores paying for the same, and the Europeans theirs from the Bazar. On the 25th of April, Messrs. Robinson and Lawrence commenced the Observations, according to the Instructions, which were continued during the stay of the Party at Bencoolen. On the 5th of May at about 10 minutes past 2 P. M. a violent and alarming shock of an Earthquake was felt—it lasted some time, the motion was considerable, attended by a noise, like that of the rushing of a strong wind—the old Government House shook extremely, but does not appear to have sustained much damage—some other shocks were felt in the course of the afternoon, but not so violent—the weather was clear, except to the northward over the Mountains, and a fresh N. W. wind prevailed at the time. On the 15th of May, Captain Crisp, with Messrs. Robinson and Lawrence and the Conductors, proceeded to Hat Island, with the view of ascertaining its position: In the afternoon the Party returned to Bencoolen, with the exception of Messrs. E. and L. who remained and took some Meridian Altitudes of Stars in the night, and Bearings and Angles of prominent Points next morning—in the afternoon they returned to Fort Marlbro', and on the following day recommenced their Observations. On the 24th May, from a station on the Turret of Fort Marlbro' about 50 feet above the level of the sea, Captain Crisp and Mr. Lawrence took Bearings and Angles of remarkable points on the lofty ranges of Mountains in the interior of Sumatra. On the 31st, Captain Crisp and the Observers proceeded to Palu Bay, 8 or 10 miles S. E. of Fort Marlbro', where they arrived in the afternoon; here a Base was measured, and some Bearings and Angles of Objects in the interior and prominent points of the Range of Mountains taken; in the evening of the 1st of June they returned to Bencoolen.

On the 13th of June, Captain Crisp outlined the Party to be in readiness to embark on the Brig *Eleanor*, the property of the Master Attendant of Bencoolen, but engaged it was understood, for the Expedition—being too small for the Party, another but a smaller Vessel, belonging to the same owners, was also engaged. On the 15th, Messrs. Robinson and Lawrence, with two Lascars, embarked on the *Eleanor*, taking some of the smaller Instruments, and having in view to discover an Island at the Equator, noted to the purpose of making the Experiments upon—the Conductor and Sub-Conductor also embarked on the smaller Vessel. The Cabin of the *Eleanor* was found in possession of an Officer and his Family proceeding, it was understood, to Natal, and the Hold was nearly filled with Bricks and Lime. On the 17th of June, the Vessels sailed from Bencoolen Roads for Natal; on the 22d A. M. they passed Palu Brinjes, and another small Island S. W. of the Peggy Islands. At night a very hard and continued Squall came on, accompanied by thunder, lightning and heavy rain; the Party were obliged to take refuge in the Hold, where with the hatches on, they were in danger of suffocation—the wind adverse, and extremely violent, drove the Vessel so far to leeward, that they were obliged to return to Bencoolen, where they arrived on the 23d, and on the following day, the smaller Vessel returned with the Conductors, who had suffered a good deal by the violence of the weather, in consequence of the state of their health, and had the greater part of their baggage rendered useless. On the 25th, Captain Crisp came on board, and ordered the Instruments and Baggage to be landed, and taken to Fort Marlbro'. 26th, Messrs. Robinson and Lawrence returned to their encampment, and recommenced observing—having Chronometers belonging to Sir S. Raffles and Captain Patterson of the H. C. Ship Canning—besides those with the Expedition, to ascertain the rates of. Most of the Party were attacked with fever during their stay at Bencoolen.

On the 7th of July the whole of the Party, with the Instruments, Tents, Baggage, &c. embarked on the H. C. Ship Canning, Captain Patterson, and on the 23d, they left Bencoolen Roads for Tappanooly; where the Ship arrived on the 8th of August, and the Party landed on the 9th, to the great relief of the Observers and Conductors of Stores, who the Dunnes state, had fared on board, in a way they had by no means looked for.

The Tents were pitched on the Island of Tappanooly, near the Bazar of the Resident, Mr. Prince. On the 11th, the Observations were commenced, on a small rocky height at the Southern extremity of the Island, near the Flag Staff.

On the 15th, Mr. Robinson and the two Conductors, with Lascar, embarked on the Eleanor, (which had anchored Tappoonoly before the Cutwigs) for Pulo Penjang where they arrived on the 17th. On the 19th of August, they visited Tappoonoly the shore, which was left by them of the party who were about the encampment of Mr. Lawrence upon the September 5th, Captain Crisp with Mr. Lawrence proceeded to the Island of Pulo Banka and the 7th, arrived at Tappoonoly Bay, and afterwards to the mountainous Island called the Pagee Land Pool—Sights for the Longitude and Bearings and Angles were taken, and they returned to Tappoonoly about midnight. 8th, Mr. Lawrence proceeded to Round Harbour Point, for the purpose of laying down its position, and the positions of the Mountain Islands, together with some points at Tappoonoly Bay. The Ship Eleanor proceeded on the 11th from Pulo Penjang. 13th, at the Eyrgates was sent on board the Ship, and the remainder of the Party embarked at sunset for Pulo Penjang, where they arrived on the 15th. Observations were commenced by Mr. Lawrence on the following day at a station near the Resident's House. On the 16th, the Eleanor sailed for Bencoolen, for another supply of materials for the Pillar. September 18th, Mr. Lawrence proceeded with Captain Crisp to Pulo Tellore, where Observations for the Latitude and Longitude were taken, and the Angles of the adjacent Islands and their bearings from each other. Between Points Kedegree and Adrienne Lighthouse were taken. Another expedition made on the 25th, to Pulo Pelapeago, for the purpose of getting Stone in quantities; and it was intended to have proceeded thence to the other Islands near the Equator, but the winds and weather having been very unfavourable, they were obliged to return on the 28th to Pulo Penjang. On the 29th, they ventured out again for Natal, but returned the following day. On the 30th at night, Captain Crisp in one Boat, and Mr. Lawrence in another, sailed for Natal, and proceeded together as far as Pulo Tanjang, where, early on the 3d of October, the Boats separated, the one with Captain Crisp proceeding round the Westside of the Island, and the other taking a direct course for Natal; the weather and winds being unfavourable, the latter strong with a heavy sea—the Boat with Mr. Lawrence returned to Pulo Tanjang—and on the 5th sailed again, but was obliged to put in for Shelter above the previous anchorage in the River at Palmer—Next day, the 6th, having heard an intelligence of Captain Crisp, Mr. Lawrence went to the Resident, and returned a reply before the 8th, stating that Captain C. had left Natal, and arrived Mr. L. to remain at Pulo Penjang—the weather very unfavorable at the time for Provisional may therefore be proceeded to the Northward. It was not on the 9th, they could quarter for Pulo Penjang, a distance only seventeen miles—Captain Crisp having ship-wrecked. On the 8th, at 8 A.M. the weather being fresh at the time, a Sail-boat, an Europeans on it, which is stated to have gone aground, an exploratory station for four months—weather fine a slight wind, and the shores afterwards—three sharks appeared to come from the East—to the direction of Moose Island. On the 8th at night, two Vessels, one with Captain Crisp and the other with Mr. Lawrence, sailed for Natal, and entered late of night on the 7th. On the 8th and 9th, Observations made. On the 10th in the morning, the position of Natal Hill was laid down. In the evening they left Natal in the Pocket Boat for Pulo Penjang, entered at 10 P.M. on the 12th, and anchored close to a Coral Reef, the water on which being low-shallow, they proceeded to the land, the S. E. part of the Island, in the small Boat—where Observations were taken for the Latitude and Longitude—they returned in the evening to the Pocket Boat, and sailed for Pulo Penjang, where they arrived on the 13th at Sunrise. Early on the 14th, the Cutwigs and Sub-Conductor, with a great part of the Baggage, embarked in the Pocket Boat, and Mr. Lawrence in the small Boat, for Pulo Penjang—but owing to adverse Winds, and bad weather, were obliged to return to the 15th at Pulo Penjang. The Pocket, a sort of Monsoon Vessels, being exposed to moderate Provisions on that part of the Coast, Captain Crisp was appointed by a Commandant by the Assistant Resident—On the 21st, four Officers and his Family embarked on a Ship for Natal. Observations for the Rate of Chronometers, and for the Latitude and Longitude were commenced, and duration of the Clock made. The Eleanor returned from Bencoolen on the 5th of November. On the 17th of November, Captain Crisp arrived in a small Boat from Natal. On the 18th, Captain Crisp in one Boat, Mr. Lawrence and the Conductor in another, sailed for Pulo Pyramondo eight Sailing Boats very dark, the Boats parted company, and the latter went on past Pulo Pelapeago, as far as Tanjang—each point—the wind being strong with a heavy sea, they were obliged to make the best of their way back to Pulo Penjang.

At one time, made fruitless attempts to ground in Pulo Pisang, and arrived at the S. E. entrance on the 25th—Hauled and commenced sailing down river and clearing a place for the Tents. On the 26th, the Brig *Kitty* having left Pulo Pisang on the 21st, arrived with Captain Crisp and Mr. Robinson, her greater part of the Instruments, Tents and Baggage—the Brig anchored about 6 miles off shore. In the course of the day, Captain Crisp accompanied by the Sub-Conductor, came on shore in a Boat, and afterwards returned in the Brig, with the intention of sending the Instruments and all the other articles on shore in the morning. Soon after having gone very heavy squalls from the N. W. at night, during which the only two Boats they had were lost, it became impossible to land any things, and the Master was therefore got under weigh for Pulo Pisang, and did not return until the 7th, having touched at Natal—On the 5th, Mr. Robinson and the Sub-Conductor landed with a part of the Baggage, and by the 6th in the morning all the articles were on shore and the Tents up—On the 10th Captain Crisp came on shore—they observed for the Latitude, and found the S. E. point of the Grand nearly 8 minutes North of the Equator. On the 11th, Captain Crisp sailed for Pulo Pisang, having directions for Mr. Lawrence and the Conductor to proceed to a small Island in the S. E. and to examine if it was suited to the purpose we required.* Early on the 12th Mr. Lawrence proceeded to the Island, with the requisite Instruments and a Baggage Tent, also three Lascars, and landed about 3 o'clock in the afternoon—The Conductor having been sick, was not able to accompany the party. On the 13th, they examined the Island, found it 11 feet above the level of the Sea, composed of sand mixed upon a foundation of Coral, in length 200 feet and breadth 100 feet, distant from the main land about 10 leagues, with a good landing place, and suitable in every respect for making the Experiments upon—having dug a hole in the depth of 7 feet, they found very good water, and in abundance—there being no other Islands in the vicinity nearer to the Equator than this. On the 15th, Mr. Lawrence returned to Pulo Pisang, and on the following day, Mr. Robinson proceeded with a part of the Baggage, for the small Island, which is called *Cannah Lant*, where he landed—Mr. Lawrence and the Commander of the Brig sailing at the same time in a smaller boat, which having been found too deeply laden, and bad weather coming on, they returned, and did not reach the small Island until the following day. The Instruments, and Baggage were got to the Island by the 7th of January,—and the Observatory was put up.

On the 8th of January the Observations, having been somewhat retarded in the primary object of the Expedition, may be said to have commenced. At the Island *Cannah Lant*, a slight shock of an Earthquake was felt on the 30th of December, which lasted about half a minute. On the 16th of January, Captain Crisp arrived from Natal, finding the Pillar commenced, and the Observations for the Latitude, Time, and Longitude, going on. On the 21st Captain Crisp arrived again from Natal, and on the 23d proceeded to *Aye Besar*—The Conductor, whose health rendered it necessary, left the small Island for Pulo Pisang. The Pillar, having the Flags of Trafalgar erected according to the Ordinances, was finished on the 25th; there not having been Bricks collected—the Foundation and back part of the Pillar, were formed of pieces of the Coral Rock, which was found to be very hard, and at last equal to brick for the purpose. On the 31st of January, the Plinth and Frame for supporting the Pendulum of Experiment, were finally secured in their places—The Clock Case was then erected in the Frame—On the 3d of February Captain Crisp arrived from Natal—the Works of the Clock were put up, and on the 5th Observations taken for finding its Rate. On the 7th Captain Crisp returned to Natal in the Brig *Kitty*, having seen that every thing was in a proper train for commencing the Experiments with the Pendulum—On the 11th, three of the savage Inhabitants of those parts, who came here under the protection of for the purpose, of Salangs, got into the large Tent, and took from thence, the Transit Instrument, Azimuth Compass,

* It appears from a Letter of Captain Crisp's, which was despatched by a European vessel, and which I did not receive until the end of last September, although written many months before, that as the Brig *Kitty* had suffered very materially, by the bilge and repeatedly driving about going aloof, and in an open boat, in search of a proper station for making the Experiments upon—none of the Vessels were near that time at Natal.

Chronometer, and a small box belonging to Captain Crisp; thinking, as it would appear, that the brass parts of the Instruments were gold.

On the 22d of February, Messrs. Robinson and Lawrence commenced the Experiments with the Pendulum, each taking separate Sets. On the 27th, a Boat with Provisions* for the Party arrived from Natal—some of the Islands adjacent to *Gunnak Lagi*, were now visited by a few of the savage Inhabitants, under the pretence of collecting Turtle—the Party, which consisted of Messrs. Robinson and Lawrence, the Sub-Conductor and 5 Lascars—3 of these ill at first—thinking themselves a good deal exposed, added to what had before occurred, deemed it prudent to keep a look out during the night, and to establish an armed watch—whereupon assembled tribes round the Island after dark until day light—Captain Crisp having been much surprised with the loss of the Instruments—Buoys were despatched to the different Islands and Places, and search made for them, but without success. The loss of the Transit is much to be regretted, as although every precaution was taken to obtain a correct rate by the Sun, still the verification of the rate by the Stars, would have been very satisfactory.

The Experiments with the Pendulum were completed on the 30th of March—and as well as were very numerous—as well as the Observations for the Latitude—the other Observations, as directed in the Instructions, were also taken—On the 30th, Captain Crisp arrived from Natal, and on the 31st ordered the Clock and Pendulum of Experiment, to be taken down and re-placed in their Cases—On the 2d inst. a. m. the Instruments, Tents and Baggage, having been sent on board the *Elenor*, Messrs. Robinson, Lawrence, with the Sub-Conductor and Lascars, embarked on that Vessel, and sailed for Pulo Penang, where they anchored in the course 14th—On the 28th, Captain Crisp, who had been to Pulo Raias, arrived, and the *Elenor* sailed for Natal—Mr. Lawrence and the Sub-Conductor, proceeded to Natal on the small boat, where they arrived the same night. On the 29th, the Instruments and some of the Baggage were transhipped to the Brig Sophia belonging to Mr. Prince—some Observations were made during their stay here—On the 29th Captain Crisp and Family came on board the Sophia, where also was Mr. Lawrence; and about 7 p. m. the vessel got under weigh, and sailed for Bencoolen—The *Elenor*, with the remainder of the Party, sailed in the same time for Pulo Penjang, and Padang, as the fittest place to take up the Conductor, Mr. Hamilton, and to lay down the Geographical position of the latter—The Sophia reached Bencoolen on the 8th of April, when the Instruments, and Baggage were landed. The Brig *Elenor* arrived four days afterwards. The requisite Observations for the Time were taken, and after waiting about 20 days for a passage, the whole Party embarked on the Ship *Elenor*, for Madras, and arrived in the Roads on the 4th of June.

I shall now proceed to give the Observations and Experiments.

It will be necessary to premise, that the following Tables contain only the Observations which were considered to be the most accurate. The method of proving them, having been by calculating the orbit of the Observations, then taking the next—and any of the results which differed more than a given quantity from that mean, were not retained†. Of the Experiments with the Pendulum, I have not deemed it proper to admit those made on the days when the Clock was found not to go, as it appears, that the machinery for keeping the Works in motion, while the Clock is winding, did not

* The Food of the Party consisted chiefly of Salt Fish and Rice—with now and then a Fowl—they had no means of fishing, and none of them indeed, no time.

† In the Observations for the Latitude of *Pic Coconut Last* where the Experiments for ascertaining the Length of the Pendulum were made, I have not admitted those which differed more than 15 seconds from the mean of the whole—Nearly all the Observations taken here by Assistant Lawrence, stood the test—and may be seen referred—in other places where the Observations were less numerous, I have admitted all, not differing more than 6 and in some cases 8, seconds, from the mean.

act, and that at such times the second hand was also liable to go back—It is true the Clock was compared, both before winding and after, with a Chronometer—but in an enquiry of this nature, where it was required to have the rate of the Clock to a very small fraction of a second, I thought it better to reject altogether the Experiments made on the days mentioned—put chiefly as the preceding Observations were so very satisfactory.—The whole of the original Observations and Experiments are preserved, however, in the Books at the Observatory.—None of the Pendulum Experiments have been rejected, except those just noticed—as having been taken on the days when the Clock was wound up—this was once a week.

AT BENCOOLEN.

Observations by Mr. P. Lawrence.

For the LATITUDE.

1809 Month.		Stars Observed.	Double Meridian Altitude.	Error of Sextant.	Height of the Therm.	Height of the Barom.	Remarks.
			° ′ ″	′ ″	°	Inches.	
April	25	α Crucis . . .	63 21 45 s.	0 45	78·3	30·12	
	26	α Crucis . . .	63 23 15	0 45	78·8	30·1	The Place of Observation bearing by Compass from the Turret of Fort Marlboro' S. 23½ d. W. distant about 200 yards. — The relative position of these, will however be accurately given, when finding the Latitude of the Fort.
	27	α Crucis . . .	63 23 30	0 45	78·5	30·12	
	28	α Crucis . . .	63 24 30	0 45	78·6	30·12	
		γ Ursæ Maj. . .	63 03 35 n.	0 45	78·6	30·09	
		δ Ursæ Maj. . .	57 47 55	0 45	78·5	29·99	
		δ Crucis . . .	70 12 15 s.	0 45	78·2	30·1	
		δ Centauri . . .	68 32 30	0 45	78·2	30·08	
		Arcturus . .	132 14 50 n.	0 45	78·2	30·1	
		α Cor. Bor. . .	117 45 50	0 45	78·1	30·06	
May	3	δ Ursæ Maj. . .	57 48 15	0 45	80·	29·91	
		γ Ursæ Maj. . .	63 06 20	0 45	80·	29·91	
		α Crucis . . .	63 24 30 s.	0 45	81·3	29·90	
		δ Crucis . . .	70 12 25	0 45	81·5	29·98	
		δ Centauri . . .	68 36 25	0 45	80·	29·98	
		α Centauri . . .	67 26 15	0 45	80·	29·99	
	7	α Crucis . . .	63 24 40	0 45	79·9	30·1	
		δ Crucis . . .	70 11 40	0 45	79·9	30·1	
	14	Sun L. L. . .	134 56 15 n.	0 47	80·	29·92	
	15	Sun L. L. . .	135 17 25	0 47	80·3	29·91	
	19	Sun L. L. . .	132 37 35	0 47	87·6	29·19	
	20	Sun L. L. . .	132 11 05	0 47	84·6	29·5	
	21	Sun L. L. . .	131 45 50	0 47	80·	29·9	
	22	Sun L. L. . .	131 21 35	0 47	81·	29·8	
		α Crucis . . .	63 24 15	0 47	78·5	29·95	
		δ Crucis . . .	70 11 30	0 47	78·5	29·91	
	23	δ Centauri . . .	68 37 40 s.	0 47	78·5	30·08	
		Arcturus . . .	132 13 35 n.	0 47	78·5	30·09	
		α Cor. Bor. . .	117 45 35	0 47	78·	30·15	
		Antares . . .	135 33 40 s.	0 47	80·3	30·	
	27	Sun L. L. . .	129 22 35 n.	0 47	80·6	29·93	
		α Crucis . . .	63 24 40 s.	0 47	80·	30·08	
	28	Sun L. L. . .	129 10 10 n.	0 47	81·2	29·95	
		α Crucis . . .	63 24 40 s.	0 47	79·9	30·02	
	29	α Crucis . . .	63 18 35	0 47	79·8	30·15	
		γ Crucis . . .	73 02 30	0 47	79·8	30·09	
		δ Crucis . . .	70 11 35	0 47	79·8	30·09	
		α Ursæ Maj. . .	72 03 35 n.	0 47	79·9	30·15	
		δ Centauri . . .	68 37 10 s.	0 47	78·2	30·09	
		Arcturus . .	132 13 40 n.	0 47	78·2	30·09	
July	1	Sun L. L. . .	126 21 45	0 45	87·4	29·99	
		α Ursæ Maj. . .	72 03 30	0 44	79·5	29·99	

1822 Month.	Stars Observed.	Double Meridian Altitude.	Error of Sextant.	Height of the Thermo.	Height of the Barom.	Remarks.
		° ′ ″	° ′	°	Inches.	
July 6	β Centauri . . .	68 27 35 s.	−0 44	78·0	30·07	
	Arcturus . .	132 13 40 n.	0 44	78·2	30·1	
	α Cor. Bor. . .	117 47 25	0 44	78·2	30·	
	Antares . . .	135 33 20 s.	0 44	80·4	29·97	
7	Sun L. L. . .	105 33 30 n.	0 44	88·	29·90	
	η Ursæ Maj. . .	72 03 30	0 44	79·3	30·1	
	β Centauri . . .	68 27 15 s.	0 44	78·2	30·09	
	Arcturus . .	132 13 45 n.	0 44	78·1	30·03	
	α Cor. Bor. . .	117 46 50	0 44	78·2	30·10	
	Antares . . .	135 33 10 s.	0 44	80·4	29·99	
10	β Centauri . . .	68 27 30	0 44	78·0	30·1	
	Arcturus . .	132 13 55 n.	0 44	78·1	30·1	
	α Cor. Bor. . .	117 47 10	0 44	78·2	30·06	
	Antares . . .	135 32 35 s.	0 44	80·0	30·	
	Sun L. L. . .	127 14 25 n.	0 44	88·5	29·90	
11	Sun L. L. . .	127 27 15	0 44	88·8	29·93	
	β Centauri . . .	68 27 15 s.	0 44	80·	30·08	
	Arcturus . .	132 13 40 n.	0 44	78·1	30·06	
	α Cor. Bor. . .	117 47 30	0 44	78·1	30·08	
	Antares . . .	135 33 10 s.	0 44	78·0	30·1	
	γ Draconis . .	69 25 50 n.	0 44	80·0	29·91	
12	Sun L. L. . .	127 44 35	0 44	80·	29·93	
13	Sun L. L. . .	128 01 40	0 44	88·0	29·9	
	Arcturus . .	132 13 30	0 44	78·2	30·1	
	α Cor. Bor. . .	117 47 20	0 44	78·2	30·1	
	Antares . . .	135 33 30 s.	0 44	78·5	30·09	
14	Sun L. L. . .	128 18 55 n.	0 44	88·	29·9	
15	Sun L. L. . .	128 37 10	0 44	87·4	29·92	
	α Cor. Bor. . .	117 47 45	0 44	78·3	30·1	
16	α Cor. Bor. . .	117 47 40	0 44	78·0	30·07	
	Antares . . .	135 33 45 s.	0 44	80·3	30·0	
17	Sun L. L. . .	129 15 30 n.	0 44	90·2	29·90	
	α Cor. Bor. . .	117 47 35	0 44	78·2	30·06	
	Antares . . .	135 33 20 s.	0 44	80·	30·	
	γ Draconis . .	69 26 15 n.	0 44	84·	30·1	

For the Time, Longitude, and Rates of Chronometers.

1822 Month.	Double Altitudes of the Sun.	Time by Chronometer 391. Forenoon.	Afternoon.	Comparison of the Chronometers with 391.	Remarks.
	°	h. ′ ″	h. ′ ″	h. ′ ″	
April 20	93 L. L. ..	7 37 25	1 07 29	391 10 22 27·8	These Observations were taken on our arrival at Bencoolen from Madras, at a station about 230 feet S. E. of the Old Government House.
	94 L. L. ..	7 41 42	1 03 11	397 10 32 24·3	
	96 U. L. ..	7 43 40	1 01 19	6 9 56·5	
	96 L. L. ..	7 43 33	12 58 39	391 10 22 27·9	
	98 U. L. ..	7 48 02	12 55 52	Earn. 10 34 44·2	
	99 L. L. ..	7 50 20	12 51 35·5	12 16·5	
	100 U. L. ..	7 52 22	12 52 32		
April 21	102 U. L. ..	8 07 11	12 35 16	391 10 22 00·6	
	107 L. L. ..	8 10 12	12 32 54·5	397 10 32 15·5	
	109 U. L. ..	8 12 17·5	12 31 49	6 10 18·9	
	109 L. L. ..	8 14 41	12 28 15	391 10 22 08·6	
	111 U. L. ..	8 16 47·5	12 27 19·5	Earn. 10 34 25·1	
	111 L. L. ..	8 18 09	12 24 37	12 18·5	
	113 U. L. ..	8 21 17·5	12 22 50		
	113 L. L. ..	8 22 42	12 20 24		
April 25	93 U. L. ..	7 46 27	12 34 33·5	391 10 22 33·2	
	97 L. L. ..	7 48 43	12 32 25	397 10 31 24·2	
	99 U. L. ..	7 50 32	12 30 13	10 30·0	
	99 L. L. ..	7 53 12	12 47 50·5	391 10 22 33·2	
	101 U. L. ..	7 55 16·5	12 45 47	Earn. 10 33 19·2	
	101 L. L. ..	7 57 41	12 43 23	10 37·0	
	103 U. L. ..	7 59 45	12 41 20		
	103 L. L. ..	8 02 59·5	12 38 56		
	105 U. L. ..	8 04 14	12 36 49·5		
	105 L. L. ..	8 06 37·5	12 34 27		
April 26	97 U. L. ..	7 46 37	12 33 43·5	391 10 22 14·1	
	97 L. L. ..	7 49 00	12 31 24	397 10 31 27·1	
	99 U. L. ..	7 51 02·5	12 49 16·5	11 13·0	
	99 L. L. ..	7 53 26	12 46 55	391 10 22 14·1	
	101 U. L. ..	7 55 32	12 44 49	Earn. 10 32 55·1	
	101 L. L. ..	7 57 54	12 42 28	12 41·0	
	103 U. L. ..	7 59 59·5	12 40 20		
	103 L. L. ..	8 02 25	12 37 58		
	105 U. L. ..	8 04 30·5	12 35 51		
	105 L. L. ..	8 06 55	12 33 26		
April 27	99 U. L. ..	7 51 18	12 48 27	391 10 19 34·3	
	99 L. L. ..	7 53 38	12 45 02	397 10 31 19·3	
	101 U. L. ..	7 55 26	12 43 58	11 19·0	
	103 U. L. ..	8 00 15·5	12 39 27	391 10 19 34·3	
	103 L. L. ..	8 02 40	12 37 03	Earn. 10 32 39·5	
				12 45·0	
April 28	99 L. L. ..	7 53 53	12 45 05·5	391 10 19 33·6	
	101 U. L. ..	7 55 59	12 43 02	397 10 31 17·6	
	101 L. L. ..	7 58 22·5	12 40 35	11 38·0	
	103 U. L. ..	8 00 30·5	12 38 29·5	391 10 19 33·6	
	103 L. L. ..	8 02 54·5	12 36 04	Earn. 10 32 22·0	
				12 39·0	

1822 Month.	Double Altitudes of the Sun.	Times by Chronometer 201. Forenoon.	Afternoon.	Comparison of the Chronometers with 201.	Remarks.
	°	h. ′ ″	h. ′ ″	h. ′ ″	
April 25	97 E. L. . .	7 53 36	19 16 53	201 10 19 12 0	
	99 U. L. . .	7 53 49	19 16 37·5	207 10 21 31 0	
	99 L. L. . .	7 54 09·5	12 14 58	11 34 0	
	101 U. L. . .	7 55 14	19 18 00		
	101 L. L. . .	7 55 39	19 20 41·5	201 10 19 12 0	
	103 U. L. . .	8 00 46	19 27 21	Corr. 10 22 07 0	
	103 L. L. . .	8 03 13·5	19 29 50·5	19 34 0	
	105 U. L. . .	8 03 37·5	19 31 27·5		
	105 L. L. . .	8 07 45·5	12 25 39·5		
May 2	97 U. L. . .	7 49 08	12 45 53	201 10 19 39 0	
	97 L. L. . .	7 50 31	12 46 18	207 10 21 57 0	
	99 U. L. . .	7 50 48	12 44 10	11 17 0	
	99 L. L. . .	7 52 05	12 41 44		
	101 U. L. . .	7 57 13	12 47 31·5	201 10 19 39 0	
	101 L. L. . .	7 59 42	12 52 07	Corr. 10 21 19 0	
	103 U. L. . .	8 01 51·5	12 54 56·5	11 20 0	
	103 L. L. . .	8 04 19	12 59 30		
	105 U. L. . .	8 06 28·5	13 00 10		
	105 L. L. . .	8 09 03·5	12 57 43·5		
May 3	97 U. L. . .	7 49 14·5	12 47 51	201 10 19 21 0	
	97 L. L. . .	7 50 40	12 48 27	207 10 21 45 0	
	99 U. L. . .	7 50 50·5	12 45 15·5	11 24 0	
	99 L. L. . .	7 52 03·5	12 43 59		
	101 U. L. . .	7 57 55	12 50 43	201 10 19 21 0	
	101 L. L. . .	8 00 03	12 50 31	Corr. 10 22 18 0	
	103 U. L. . .	8 02 11·5	12 54 54	11 03·5	
	103 L. L. . .	8 04 44	12 59 37		
	105 U. L. . .	8 06 59·5	12 58 05		

1822 Month.	Double Altitudes of the Sun.	Times by Chronometer 201. Forenoon.	Afternoon.	Comparison of the Chronometers with 201.	Remarks.
	°	h. ′ ″	h. ′ ″	h. ′ ″	
July 1	101 U. L. . .	8 39 38	13 28 08	202 10 20 09 0	These Observations were taken after those of the party who had returned, and been detained by Ill-manners, when attempting to proceed to the Equator on the Brig Chimari.
	101 L. L. . .	8 41 14	13 30 11	201 10 19 46 0	
	103 U. L. . .	8 43 02	13 32 30	9 37 0	
	103 L. L. . .	8 45 04·5	13 35 08		
	105 U. L. . .	8 47 27·5	13 38 43	207 10 20 09 0	
	105 L. L. . .	8 49 55	13 43 53·5	Corr. 10 20 30 0	
	107 U. L. . .	8 53 20·5	13 49 45	01 30 0	
July 2	103 U. L. . .	8 53 55	13 41 22	202 10 20 16 0	
	103 L. L. . .	8 56 13·5	13 38 09·5	201 10 19 46 0	
	105 U. L. . .	8 58 01	13 36 49·5	30 00 0	
	105 L. L. . .	9 00 55	13 33 30·5		
	107 U. L. . .	9 04 40	13 30 04	207 10 20 16 0	
	107 L. L. . .	9 07 03·5	13 27 03	Corr. 10 20 30 0	
	109 U. L. . .	9 10 20·5	13 24 32·5	01 30 0	
	109 L. L. . .	9 13 08	13 21 58		

1877 Month.	Double Altitudes of the Sun.	Times at Chronometer 207 Foreman.	Times at Chronometer 207 Ashrenson.	Comparison of the Chronometers with 207.	Remarks.
	°	h. ′ ″	h. ′ ″	h. ′ ″	
July 3	100 U. L. . .	8 35 04	12 41 56	207 10 28 38·5	
	100 L. L. . .	8 38 23	12 38 59	201 10 15 35·4	
	102 U. L. . .	8 41 02·5	12 36 19·5	93 02·3	
	102 L. L. . .	8 44 01	12 33 19·5		
	104 U. L. . .	8 40 43	12 30 34·5	207 10 28 38·5	
	104 L. L. . .	8 49 43	12 27 33·5	*Earn.* 10 37 39·8	
	106 U. L. . .	8 52 33·5	12 24 47	0 08 00·0	
	106 L. L. . .	8 55 40	12 21 38·5		
July 4	100 U. L. . .	8 36 47	12 42 09	207 10 28 33·2	
	100 L. L. . .	8 39 02·5	12 39 07·5	201 10 15 37·1	
	102 U. L. . .	8 41 09	12 36 49·5	97 35·0	
	102 L. L. . .	8 43 57·5	12 33 50·5		
	104 U. L. . .	8 46 03	12 31 09·5	207 10 28 33·1	
	104 L. L. . .	8 49 43·5	12 28 05·5	*Earn.* 10 37 33·1	
	106 U. L. . .	8 52 09·5	12 25 20·5	0 58·3	
	106 L. L. . .	8 55 55·0	12 22 12		
July 5	100 U. L. . .	8 35 14	12 42 30·5	207 10 29 07	
	100 L. L. . .	8 38 18·5	12 39 38	201 10 15 53	
	102 U. L. . .	8 40 50·5	12 37 00·5	0 03 37	
	102 L. L. . .	8 43 59·5	12 34 00·5		
	104 U. L. . .	8 46 31·5	12 31 47	207 10 29 07	
	104 L. L. . .	8 49 38·5	12 28 37·5	*Earn.* 10 38 14	
	106 U. L. . .	8 52 24	12 25 53·5	0 53	
	106 L. L. . .	8 55 28	12 22 48·5		
July 6	100 U. L. . .	8 35 19·5	12 43 04	207 10 29 09	
	100 L. L. . .	8 38 42	12 40 30·5	201 10 15 21	
	102 U. L. . .	8 40 49	12 37 53·5	23 58	
	102 L. L. . .	8 43 43	12 34 59·5		
	104 U. L. . .	8 46 05·5	12 32 15·5	207 10 29 10	
	104 L. L. . .	8 49 20	12 29 14·5	*Earn.* 10 38 31	
	106 U. L. . .	8 52 11·5	12 26 29	0 26	
	106 L. L. . .	8 55 10	12 23 24		
July 7	100 U. L. . .	8 35 13·5	12 44 05·5	207 10 29 33	
	100 L. L. . .	8 38 06·5	12 41 04·5	201 10 15 09	
	102 U. L. . .	8 40 42·5	12 38 09	24 25	
	102 L. L. . .	8 43 39·5	12 35 31·5		
	104 U. L. . .	8 46 09	12 29 32·5	207 10 29 34	
	104 L. L. . .	8 49 09·5	12 26 43·5	*Earn.* 10 38 49	
	106 U. L. . .	8 52 06·5	12 27 07	0 48	
	106 L. L. . .	8 55 09·5	12 24 03		
July 8	100 U. L. . .	8 35 06	12 44 21	207 10 29 04	
	100 L. L. . .	8 37 58	12 41 40	207 10 15 04	
	102 U. L. . .	8 40 32	12 38 09·5	24 38	
	102 L. L. . .	8 43 27	12 36 07	207 10 29 46	
	104 U. L. . .	8 46 06·5	12 32 29·5	*Earn.* 10 39 05	
	104 L. L. . .	8 49 08·5	12 30 27	0 41	
	106 U. L. . .	8 51 51·5	12 27 44		
	106 L. L. . .	8 54 53·5	12 24 29·5		

1822 Month.	Double Altitudes of the Sun.	Times by Chronometer 397. Forenoon.	Times by Chronometer 397. Afternoon.	Comparison of the Chronometers with 397.	Remarks.
	°	h. ′ ″	h. ′ ″	h. ′ ″	
July 9	100 U. L. . .	8 34 54·5	12 43 06·5	397 10 39 57	
	100 L. L. . .	8 37 43·5	12 42 13·5	391 10 15 04	
	102 U. L. . .	8 40 21	12 39 37·5	24 53	
	102 L. L. . .	8 43 17	12 36 40·5	397 10 39 57	
	104 U. L. . .	8 45 30·5	12 34 02	Earn. 10 39 22	
	104 L. L. . .	8 48 05	12 31 04	0 35	
	106 U. L. . .	8 51 38·5	12 28 20		
	106 L. L. . .	8 54 39·5	12 25 19·5		
July 10	100 U. L. . .	8 34 43·5	12 45 41·5	397 10 40 12	
	102 L. L. . .	8 37 42	12 42 47	391 10 14 57	
	102 U. L. . .	8 40 11	12 40 14·5	25 15	
	102 L. L. . .	8 43 04·5	12 37 20·5	397 10 40 12	
	104 U. L. . .	8 45 45·5	12 34 42·5	Earn. 10 39 42	
	104 L. L. . .	8 48 43·5	12 31 43·5	0 30	
	106 U. L. . .	8 51 22·5	12 29 01·5		
	106 L. L. . .	8 54 20	12 25 50·5		
July 11	100 U. L. . .	8 34 38	12 46 15·5	397 10 40 22	
	100 L. L. . .	8 37 24	12 43 26	391 10 14 51	
	102 U. L. . .	8 39 52	12 40 53·5	25 31	
	102 L. L. . .	8 42 51	12 37 58	397 10 40 22	
	104 U. L. . .	8 45 27·5	12 35 20	Earn. 10 39 56	
	104 L. L. . .	8 48 24·5	12 32 23·5	0 26	
	106 U. L. . .	8 51 08	12 29 41		
	106 L. L. . .	8 54 08	12 26 39·5		
July 12	100 L. L. . .	8 37 08·5	12 44 02	397 10 40 32	
	102 U. L. . .	8 39 41	12 41 28·5	391 10 14 55	
	102 L. L. . .	8 42 33	12 38 36·5	25 42	
	104 U. L. . .	8 45 10·5	12 35 58·5	397 10 40 32	
	104 L. L. . .	8 48 02	12 33 04·5	Earn. 10 40 09	
	106 U. L. . .	8 50 48·5	12 30 21	0 43	
	106 L. L. . .	8 53 43·5	12 27 23·5		
July 13	100 U. L. . .	8 34 04	12 47 10	397 10 40 46	
	100 L. L. . .	8 36 55·5	12 44 43·5	391 10 14 41	
	102 U. L. . .	8 39 05·5	12 42 00·5	26 05	
	102 L. L. . .	8 42 17·5	12 39 13·5	397 10 40 44	
	104 U. L. . .	8 44 51	12 36 38·5	Earn. 10 40 25	
	104 L. L. . .	8 47 50	12 33 44·5	0 16	
	106 U. L. . .	8 50 29·5	12 31 03·5		
	106 L. L. . .	8 53 29	12 28 03·5		
July 14	100 U. L. . .	8 37 18·5	12 46 47	397 10 40 36	
	100 L. L. . .	8 39 55·5	12 45 19·5	391 10 14 53	
	102 U. L. . .	8 38 08·5	12 42 47·5	25 23	
	102 L. L. . .	8 41 40	12 38 02	397 10 40 36	
	104 U. L. . .	8 44 37·5	12 37 19·5	Earn. 10 40 47	
	104 L. L. . .	8 47 30·5	12 34 20	0 09	
	106 U. L. . .	8 50 09·5	12 31 47·5		
	106 L. L. . .	8 53 07·5	12 28 48·5		

1822 Month.	Double Altitudes of the Sun.	Transit Chronometers 397. Forenoon.	Afternoon.	Comparison of the Chronometers with 397.	Remarks
	°	h. ′ ″	h. ′ ″	h. ′ ″	
July 15	100 U. L. ..	8 33 39	19 48 45	397 10 41 07	
	100 L. L. ..	8 36 39·5	19 45 58·5	396 19 14 93	
	102 U. L. ..	8 38 39	19 43 48	0 26 14	
	102 L. L. ..	8 41 49·5	19 40 29·5	397 10 41 07	
	104 U. L. ..	8 44 59·5	19 38 00·5	Corr. 10 41 06	
	104 L. L. ..	8 47 09·5	19 35 08	0 01	
	106 U. L. ..	8 49 49	19 32 50		
	106 L. L. ..	8 52 47·5	19 29 59·5		
July 16	100 U. L. ..	8 33 19·5	19 49 39·5	397 10 41 16	
	102 U. L. ..	8, 38 39	19 44 06	396 19 14 13	
	102 L. L. ..	8 41 19·5	19 41 19	0 27 03	
	104 U. L. ..	8 43 58·5	19 38 43·5	397 10 41 16	
	104 L. L. ..	8 46 45·5	19 35 51	Corr. 10 41 08	
	106 U. L. ..	8 49 09·5	19 33 39·5	0 08	
	106 L. L. ..	8 52 01	19 30 17·5		
	108 U. L. ..	8 55 03·5	19 27 35		
	108 L. L. ..	8 58 03·5	19 24 33		
July 17	100 U. L. ..	8 29 53	19 50 09·5	397 10 41 05	
	100 L. L. ..	8 33 56	19 47 17	396 19 14 09	
	102 U. L. ..	8 36 08	19 44 47	0 27 04	
	102 L. L. ..	8 40 33	19 41 58·5	397 10 41 05	
	104 U. L. ..	8 43 39·5	19 39 03	Corr. 10 41 00	
	104 L. L. ..	8 46 51·5	19 36 39	0 11	
	106 U. L. ..	8 49 58·5	19 33 58		
	106 L. L. ..	8 54 53	19 33 01·5		

1822		Lowchow.			with Lowchow	
April 10	96 U. L. ..	9 13 09	9 39 32·5			These Observations were taken on our arrival at Bencoolen from Pulo Cornouh Laut—the station Captain Welsted's garden, 100 yards S. S. E. of Fort Marlboro'.
	96 L. L. ..	9 15 01	9 37 18			
	98 U. L. ..	9 17 19	9 35 09			
	98 L. L. ..	9 19 33·5	9 33 06·5			
	100 U. L. ..	9 23 19·5	9 31 13·5			
	100 L. L. ..	9 25 43	9 28 50·5			
April 11	96 U. L. ..	9 13 39	9 39 07·5			
	96 L. L. ..	9 15 41·5	9 36 52·5			
	98 U. L. ..	9 17 20	9 34 50			
	98 L. L. ..	9 19 33	9 32 39·5			
	100 U. L. ..	9 23 39·5	9 30 43			
	100 L. L. ..	9 25 54	9 28 31			
	102 U. L. ..	9 28 04	9 26 24			
	102 L. L. ..	9 30 17	9 24 13			

For the Bearing of Fort Marlborough Turret,

and the Variation of the Compass.

1819 Month.	Times by Chronometer 397.	Angle between the Sun's nearest Limb and Fort Marlborough.	Error of Sextant.	Remarks.
	h. ′ ″	° ′ ″	° ′	
May 30	4 53 51	42 47 30	−0 47	
	4 59 09	42 39 40	0 47	
	4 57 31	42 35 40	0 47	
	4 58 45	42 33 45	0 47	
	5 00 02	42 33 50	0 47	
July 1	4 59 05	41 29 55	0 44	
	5 00 46	41 28 30	0 44	
	5 01 50	41 25 55	0 44	
	5 02 09	41 24 25	0 44	
	5 04 01	41 21 30	0 44	
	5 05 04	41 20 40	0 44	
5	5 00 46	41 32 30	0 44	
	5 01 41	41 30 40	0 44	
	5 02 39	41 28 45	0 44	
	5 03 40	41 27 55	0 44	
	5 04 41	41 25 30	0 44	
	5 05 41	41 24 20	0 44	
	5 06 40	41 22 10	0 44	
	5 07 38	41 21 20	0 44	
6	5 01 57	41 41 11	0 44	
	5 03 07	41 40 03	0 44	
	5 04 21	41 38 20	0 44	
	5 05 22	41 37 10	0 44	
	5 06 24	41 35 45	0 44	
	5 07 19	41 34 30	0 44	
	5 08 36	41 32 40	0 44	
	5 09 29	41 30 45	0 44	
11	5 02 14	42 09 00	0 44	
	5 03 38	42 08 00	0 44	
	5 04 38	42 06 05	0 44	
	5 05 31	42 05 20	0 44	
	5 06 19	42 04 00	0 44	
	5 07 17	42 02 35	0 44	
	5 08 12	42 01 10	0 44	
13	5 01 45	42 28 25	0 44	
	5 02 52	42 26 30	0 44	
	5 03 56	42 24 10	0 44	
	5 04 43	42 22 30	0 44	
	5 07 23	42 19 25	0 44	
	5 08 28	42 17 45	0 44	
	5 09 17	42 15 40	0 44	
	5 10 31	42 13 50	0 44	

For ascertaining the Distance between the Station of Observation and Fort Marlborough Turret.

Length of the Base 300,9 Feet.

At the West End of the Base (or Station of Observation.)

between	and	Angles. ° ′ ″
East End of the Base	Fort Marlborough Turret . . .	117 15 00

At the East End of the Base.

West End of the Base	Fort Marlborough Turret . . .	43 02 00

Station on Fort Marlborough Turret.

Rat Island Station	Rat Island Flag Staff	0 36 15
"	North high Peak (Lye Peak) . . .	123 48 15
"	High Peak (Goonum Pallee) . . .	128 19 00
"	Sugar Loaf Hill (Goonum Beakon) . .	206 19 15
"	Lion's Rump	106 15 15
"	Rookit Kuboot	141 26 15
"	Buffaloe point	64 41 00
"	Staff on Tree (Mr. Pesagrove's Garden)	91 44 00
"	Station of Observation	99 46 30
	Elevation of Goonum Pallee . . .	3 00 00
	Elevation of Goonum Beakon . . .	1 35 00

At Rat Island:

Observations for the Latitude.

1822 Month.	Stars Observed.	Double Meridian Altitude. ° ′ ″	Error of Sextant. ° ′	Height of the Therm. °	Height of the Barom. Inches.	Remarks.
May 16	Sun's L. L. .	133 23 11 N	+0 47	80	29	
	α Ursa Maj . .	71 58 30	0 47	80	29·83	
	δ Centauri . .	68 42 35 S.	0 47	80	29·80	
	α Centauri . .	67 31 40	0 47	80	29·80	
	Arcturus . .	132 00 40 N	0 47	80	29·84	
	α Cor. Bor. . .	117 41 35	0 47	80	29·84	

For the Time and Longitude of Rat Island.

1822 Month.	Double Altitudes of the Sun. °	Times by Chronometer 391. Forenoon. h. ′ ″	Afternoon. h. ′ ″	Comparison of the Chronometers with 391.	Remarks.
May 16	105 U. L. . .	8 12 31	12 18 37		
	105 L. L. . .	8 16 22	12 15 36		

At Rat Island Station.

between	*and*	Angles. °	′	″
Fort Marlborough Turret	North high Peak (Lye Peak) . . .	49	19	30
	High Peak (Goonum Palloo) . . .	34	48	40
	Sugar Leaf Hill (Goonum Benkoo) . .	19	33	00
	Lion's Rump	9	30	00
	Staff on Tree (Mr. Prosgrave's Garden)	1	49	00
	Buffalo Point	77	32	50

At Pulo Bay.

Length of the Base 3442,2 Feet.

At the East End of the Base.

		°	′	″
West End of the Base	Rat Island	61	22	30
	Marlborough Point	102	31	30
	Hamilton's Tomb	109	99	00
	Sugar Leaf Hill (Goonum Benkoo) . .	143	40	30
	Lion's Rump	159	46	00
	Argyle Hill Tree	167	08	00

At the West End of the Base.

East End of the Base	Rat Island	114	32	15
	Marlborough Point	73	07	30
	Hamilton's Tomb	65	35	30
	Sugar Leaf Hill (Goonum Benkoo) . .	35	31	30
	Lion's Rump	19	33	00
	Argyle Hill	11	37	15

At TAPPANOOLY GLASS.

Observations for the LATITUDE.

1822 Month.		Stars Observed.	Double Meridian Altitude.			Error of Sextant.	Height of the Therm.	Height of the Barom.	Remarks.
			°	′	″	′ ″	°	Inches.	
Aug.	11	Antares . . .	156	30	10 s.	−0 44	82·0	29·9	
	13	γ Draconis . . .	80	28	50 n.	0 44	82·5	29·92	
		α Lyræ . . .	106	15	15	0 44	82·6	29·92	
	15	Antares . . .	114	38	05 s.	0 44	83·3	29·8	
		ε Scorpionis . .	108	39	20	0 44	82·3	29·98	
		λ Scorpionis . .	102	39	05	0 44	82·2	29·99	
		γ Draconis . . .	80	29	40 n.	0 44	82·3	29·84	
		α Lyræ . . .	106	14	55	0 44	82·8	29·8	
	17	γ Draconis . . .	80	29	15	0 44	82·4	29·84	
	21	γ Draconis . . .	80	28	45	0 44	82·	29·83	
		α Lyræ . . .	106	15	20	0 44	81·9	29·85	
	22	γ Draconis . . .	80	28	25	0 44	80·4	29·9	
		α Lyræ . . .	105	15	20	0 44	80·3	29·84	
		β Lyræ . . .	117	09	55	0 44	80·4	29·9	
		ε Sagittarii . .	115	19	45 s.	0 44	80·4	29·84	
	26	λ Scorpionis . .	102	38	55	0 44	83·5	29·91	
		ε Sagittarii . .	107	39	55	0 44	83·3	29·9	
Sept.	1	λ Scorpionis . .	102	38	55	0 44	84·0	29·93	
		γ Draconis . . .	80	28	50 n.	0 44	81·4	29·9	
		ε Sagittarii . .	107	39	05 s.	0 44	81·6	29·88	
		α Lyræ . . .	106	14	55 n.	0 44	80·8	29·94	
		ε Sagittarii . .	116	19	15 s.	0 44	80·4	29·89	
		β Cygni . . .	105	18	35 n.	0 44	81·5	29·9	
		β Cygni . . .	91	00	00	0 44	81·5	29·9	
		α Paronis . . .	92	01	30 s.	0 44	81·4	29·8	
		γ Cygni . . .	106	06	55 n.	0 44	81·4	29·91	
		α Cygni . . .	91	11	35	0 44	81·4	29·91	
		Fomalhaut . .	80	58	00 s.	0 44	81·3	29·93	
	2	λ Scorpionis . .	102	39	10 s.	0 44	80·3	29·88	
		γ Draconis . . .	80	28	40 n.	0 44	81·4	29·91	
		ε Sagittarii . .	107	39	40 s.	0 44	81·4	29·9	
		α Lyræ . . .	106	15	00 n.	0 44	80·8	29·93	
		ε Sagittarii . .	116	19	10 s.	0 44	80·4	29·88	
		α Sagittarii . .	94	41	40	0 44	80·4	29·88	
		β Cygni . . .	129	18	35 n.	0 44	80·5	29·9	
		β Cygni . . .	94	05	40	0 44	80·5	29·9	
		α Paronis . . .	92	01	15 s.	0 44	80·4	29·91	
		γ Cygni . . .	106	06	45 n.	0 44	80·4	29·91	
		α Cygni . . .	94	11	30	0 44	80·6	29·93	
		α Gruis . . .	90	58	20 s.	0 44	80·6	29·9	
		Fomalhaut . .	115	27	20	0 44	80·6	29·9	
	8	α Lyræ . . .	106	14	55 n.	0 44	80·8	29·8	
		β Lyræ . . .	117	00	45	0 44	80·4	29·88	
		β Cygni . . .	128	18	30	0 44	80·4	29·88	

For the Time, Longitude, and Rates of Chronometers.

1802 Month.	Double Altitudes of the Sun.	Times by Chronometers 307. Forenoon.	Afternoon.	Comparison of the Chronometers with 307.	Remarks.
		h. ′ ″	h. ′ ″	h. ′ ″	
Aug. 11	100 U. L. ..	8 22 56	1 30 06	307 10 58 20	
	100 L. L. ..	8 25 07·5	1 27 49·5	301 10 19 41	
	102 U. L. ..	8 27 11	1 25 45·5	0 36 45	
	102 L. L. ..	8 29 28	1 23 30·5	307 10 56 20	
	104 U. L. ..	8 31 31·5	1 21 25·5	Earn. 10 10 05	
	104 L. L. ..	8 33 48	1 19 07	02 39	
	106 U. L. ..	8 35 58	1 17 03·5		
Aug. 12	100 U. L. ..	8 22 22	1 30 19·5	307 10 56 17	
	100 L. L. ..	8 24 36·5	1 28 01·5	301 10 19 20	
	102 U. L. ..	8 26 39	1 25 39	0 36 57	
	102 L. L. ..	8 28 51	1 23 43	307 10 56 17	
	104 U. L. ..	8 31 03	1 21 36·5	Earn. 10 10 10	
	104 L. L. ..	8 33 19·5	1 19 22	02 53	
	106 U. L. ..	8 35 23·5	1 17 18		
	106 L. L. ..	8 37 40	1 15 01·5		
Aug. 13	100 U. L. ..	8 24 06	1 28 18·5	307 10 56 09 301 10 18 59	
	104 L. L. ..	8 32 44·5	1 19 37·5	0 37 10	
	106 U. L. ..	8 34 47·5	1 17 32·5	307 10 56 09	
	106 L. L. ..	8 37 04	1 15 16·5	Earn. 10 10 14	
				03 05	
Aug. 14	102 U. L. ..	8 25 35·5	1 26 22·5	307 10 55 53	
	102 L. L. ..	8 27 51	1 24 07	301 10 18 37	
	104 U. L. ..	8 29 55	1 22 05	0 37 20	
	104 L. L. ..	8 32 11	1 19 51	307 10 55 47	
	106 U. L. ..	8 34 19·5	1 17 45·5	Earn. 10 10 10	
	106 L. L. ..	8 40 49·5	1 11 10	03 19	
Aug. 15	100 U. L. ..	8 22 50·5	1 30 49·5	307 10 55 47	
	100 L. L. ..	8 23 05	1 28 34·5	301 10 18 15	
	102 U. L. ..	8 25 05	1 26 33	0 37 32	
	102 L. L. ..	8 27 21·5	1 24 17·5		
	104 U. L. ..	8 29 22	1 22 16		
	104 L. L. ..	8 31 37·5	1 20 00·5		
	106 U. L. ..	8 33 40·5	1 17 58·5		
	106 L. L. ..	8 36 56	1 15 42·5		
Aug. 16	100 U. L. ..	8 20 19	1 30 57·5	307 10 55 30	
	100 L. L. ..	8 22 30·5	1 28 44	301 10 17 52	
	102 U. L. ..	8 24 33	1 26 42·5	37 44	
	102 L. L. ..	8 26 48	1 24 27·5		
	104 U. L. ..	8 28 53	1 22 22		
	104 L. L. ..	8 31 05	1 20 10·5		
	106 U. L. ..	8 33 07	1 18 10		
	106 L. L. ..	8 35 22	1 15 54		

1897 Month.	Double Altitude of the Sun.	Times by Chronometer 297. Forenoon.	Afternoon.	Comparison of the Chronometers with 297.	Remarks.
	°	h. ′ ″	h. ′ ″	h. ′ ″	
Aug. 18	102 L. L. ..	8 21 30	1 28 58·5	297 10 35 12	
	102 U. L. ..	8 23 30·5	1 26 57·5	291 10 17 05	
	102 L. L. ..	8 25 45	1 24 43·5	6 28 02	
	104 U. L. ..	8 27 43·5	1 22 43·5		
	104 L. L. ..	8 30 00	1 20 30		
	106 U. L. ..	8 32 00	1 18 28		
	106 L. L. ..	8 34 11	1 16 15·5		
Aug. 19	100 U. L. ..	8 18 45	1 31 18·5	297 10 35 00	
	102 L. L. ..	8 20 59	1 29 05	291 10 16 45	
	102 U. L. ..	8 22 58	1 27 05·5	28 15	
	102 L. L. ..	8 23 12	1 24 31·5		
	104 U. L. ..	8 27 12	1 22 51		
	104 L. L. ..	8 29 15·5	1 20 20·5		
	106 U. L. ..	8 31 05	1 18 38		
	106 L. L. ..	8 33 40	1 16 24		
Aug. 20	104 U. L. ..	8 26 47·5	1 22 37·5	297 10 36 47	
	104 L. L. ..	8 28 53·5	1 20 41·5	291 10 16 22	
	106 U. L. ..	8 30 53	1 18 45	28 14	
	106 L. L. ..	8 33 03·5	1 16 30·5		
	108 U. L. ..	8 35 47	1 14 30·5		
	108 L. L. ..	8 37 00·5	1 12 16·5		
	110 U. L. ..	8 39 21·5	1 10 17		
	110 L. L. ..	8 41 36	1 08 01·5		
Aug. 21	102 U. L. ..	8 21 10·5	1 27 29·5	297 10 34 17·5	
	102 L. L. ..	8 22 22·5	1 25 02	291 10 15 32·5	
	104 U. L. ..	8 23 32	1 22 46	28 44·0	
	104 L. L. ..	8 27 43·5	1 22 34		
	106 U. L. ..	8 28 43	1 18 54·5		
	106 L. L. ..	8 31 57	1 16 42·5		
	108 U. L. ..	8 33 57	1 14 43		
	108 L. L. ..	8 36 08·5	1 12 29·5		
Aug. 22	100 U. L. ..	8 16 38·5	1 31 31·5	297 10 34 02	
	100 L. L. ..	8 18 30	1 29 00·5	291 10 15 13	
	102 U. L. ..	8 20 45	1 27 20·5	0 28 50	
	102 L. L. ..	8 25 00	1 25 09		
	104 U. L. ..	8 26 59·5	1 23 10		
	104 L. L. ..	8 27 11·5	1 22 37·5		
	106 U. L. ..	8 29 10·5	1 18 27		
Aug. 23	100 U. L. ..	8 31 08·5	1 31 29·5	297 10 32 49	
	100 L. L. ..	8 16 20	1 29 11	291 10 14 32	
	102 U. L. ..	8 20 37·5	1 27 22	28 17	
	102 L. L. ..	8 22 29·5	1 25 11·5		
	104 U. L. ..	8 24 27·5	1 23 13·5		
	104 L. L. ..	8 26 20	1 21 01·5		
	106 U. L. ..	8 28 20·5	1 19 02·5		
	106 L. L. ..	8 30 40	1 16 31		

1809 Month.	Double Altitudes of the Sun.	Transit Chronometer 297. Pendulum	Transit Chronometer 297. Altitudes.	Comparison of the Chronometers with 297.	Remarks.
	° ′	h. ′ ″	h. ′ ″	h. ′ ″	
Aug. 27	108 U. L. . .	9 25 59·5	1 21 08·5	297 10 53 38	
	103 L. L. . .	9 28 10	1 19 57·5	297 10 54 04	
	107 U. L. . .	9 20 09	1 16 39	0 10 08	
	107 L. L. . .	9 22 10·5	1 14 47		
	109 U. L. . .	9 24 19	1 17 48		
	109 L. L. . .	9 27 09·5	1 19 36·5		
	111 U. L. . .	9 20 19·5	1 08 29·5		
	111 L. L. . .	9 43 40·5	1 06 58		
Sept. 1	106 U. L. . .	9 09 17	1 19 58	297 10 51 33	
	106 L. L. . .	9 05 07·5	1 16 42	297 10 10 57	
	108 U. L. . .	9 05 22·5	1 14 46·5	0 40 36	
	108 L. L. . .	9 09 21	1 19 26		
	110 U. L. . .	9 22 24	1 10 42		
Sept. 2	100 U. L. . .	9 11 20	1 21 00·5	297 10 51 18	
	100 L. L. . .	9 13 41·5	1 18 51·5	297 10 10 09	
	102 U. L. . .	9 15 26	1 20 20	0 41 45	
	102 L. L. . .	9 17 45	1 18 47		
	104 U. L. . .	9 19 47	1 17 31		
	104 L. L. . .	9 21 29	1 23 41·5		
	106 U. L. . .	9 23 46	1 19 40·5		
Sept. 3	100 U. L. . .	9 11 03	1 20 53	297 10 50 58	
	100 L. L. . .	9 13 10	1 18 41·5	297 10 09 18	
	102 U. L. . .	9 15 08	1 20 49	0 41 40	
	102 L. L. . .	9 17 16·5	1 18 46		
	104 U. L. . .	9 19 13·5	1 17 46		
	104 L. L. . .	9 21 21·5	1 23 35·5		
	106 U. L. . .	9 23 16	1 19 42		
	106 L. L. . .	9 25 23	1 16 33		
Sept. 4	101 U. L. . .	9 10 36·5	1 20 41	297 10 50 28	
	101 L. L. . .	9 12 45·5	1 18 56	297 10 09 31	
	103 U. L. . .	9 14 20	1 20 41·5	0 41 03	
	103 L. L. . .	9 16 47·5	1 18 53		
	105 U. L. . .	9 18 42	1 17 37·5		
	105 L. L. . .	9 20 53·5	1 23 25		
	107 U. L. . .	9 23 07	1 19 23·5		
	107 L. L. . .	9 25 00·5	1 16 09		
Sept. 5	101 U. L. . .	9 10 42	1 20 02·5	297 10 50 03	
	101 L. L. . .	9 12 55	1 18 34·5	297 10 07 08	
	103 U. L. . .	9 14 31	1 20 00	0 42 55	
	103 L. L. . .	9 16 59·5	1 18 58		
	105 U. L. . .	9 18 53	1 17 50		
	105 L. L. . .	9 21 02	1 23 45·5		
	107 U. L. . .	9 23 05	1 19 27		
	107 L. L. . .	9 25 02·5	1 16 13		

1822 Month.	Double Altitudes of the Sun.	Tiny Chronometer 397. Forenoon.	Tiny Chronometer 397. Afternoon.	Comparison of the Chronometers with 397.	Remarks.
	°	h. ′ ″	h. ′ ″		
Sept. 12	100 U. L. ..	8 07 07·5	1 09 05	397 10 48 00	
	100 L. L. ..	8 09 16	1 06 58	391 10 04 04	
	102 U. L. ..	8 11 09	1 05 04·5	0 43 03	
	102 L. L. ..	8 13 17	1 02 50·5		
	104 U. L. ..	8 15 09·5	1 21 13		
	104 L. L. ..	8 17 10·5	1 18 55·5		
	106 U. L. ..	8 19 09·5	1 17 02·5		
	106 L. L. ..	8 21 17·5	1 14 54·5		

For the Bearing of the Sugar Loaf Peak

and the Variation of the Compass.

1822 Month.	Times by Chronometer 397.	Angle between the Sun's second Limb and Sugar Loaf Peak.	Error of Sextant.	Remarks.
	h. ′ ″	° ′ ″	′ ″	
Aug. 31	4 41 57 P. M.	76 45 50	−0 44	
	4 44 05	76 45 50	0 44	
Sept. 1	4 35 34	76 21 05	0 44	
2	4 41 23	76 02 13	0 44	

At the SUGAR LOAF *Peak.*

Observation

for the Latitude.

1822 Month.	Sun Observed.	Meridian Altitude.	Error of Sextant.	Height of the Thermo.	Height of the Barom.	Remarks.
		° ′ ″	′ ″			
Sept. 5	Sun's L. L. ..	93 12 40 N.	−0 44			

For the Time and Longitude of

the Sugar Loaf Peak.

1822 Month.	Double Altitudes of the Sun.	Times by Chronometer 397. Forenoon.	Error of Sextant.	Comparison of the Chronometers with 397.	Remarks.
	°	h. ′ ″	′ ″	h. ′ ″	
Sept. 5	91 U. L. ..	7 52 14	−0 44	397 7 57 20·5	
	91 L. L. ..	7 54 22·5	0 44	391 7 15 58·5	
	93 U. L. ..	7 56 16	0 44	41 22·5	
	93 L. L. ..	7 58 25	0 44		
	95 U. L. ..	8 00 10·5	0 44		
	95 L. L. ..	8 02 17	0 44		

At Puno Pasporo

Observations for the Latitude.

1822 Month.	Names.	Double Meridian Altitude.	Error of Sextant.	Height of the Therm.	Height of the Barom.	Remarks.
		° ′ ″	′ ″	°	Inches.	
Sept. 17	α Lyræ . . .	109 49 55 n.	−0 44	80	29·91	
	β Cygni . . .	133 19 55	0 44	80	29·91	
	α Pavonis . . .	65 04 30 s.	0 44	80·5	29·91	
	α Cygni . . .	81 07 00 n.	0 44	80	29·94	
	α Gruis . . .	84 01 35 s.	0 44	79·5	29·94	
18	α Pavonis . . .	85 04 49	0 44	82·3	29·92	
	Fomalhaut . .	118 31 35	0 44	82·3	29·91	
	β Pegasi . . .	125 19 30 n.	0 44	83·3	29·91	
21	β Cygni . . .	125 13 05	0 44	80·2	30	
	γ Cygni . . .	101 01 15	0 44	80·2	30	
	α Cygni . . .	81 00 55	0 44	80·1	30	
	α Cygni . . .	113 48 15	0 44	80·1	29·92	
	α Gruis . . .	84 01 30 s.	0 44	80	29·96	
	β Gruis . . .	84 02 40	0 44	80	29·98	
	Fomalhaut . .	118 31 55	0 44	80	29·96	

For the Time, Longitude, and Rates of

Chronometers.

1822 Month.	Double Altitude of the Sun.	Tiffany Chronometer 297. Forenoon.	Tiffany Chronometer 297. Afternoon.	Comparison of the Chronometers with 297.	Remarks.
	°	h. ′ ″	h. ′ ″	h. ′ ″	
Sept. 17	101 U. L. . .	8 05 19·5	1 23 05·5	297 10 44 18	
	101 L. L. . .	8 07 27·5	1 20 57·5	291 9 59 35	
	102 U. L. . .	8 09 21	1 19 05	6 44 17	
	103 L. L. . .	8 11 29	1 16 56·5		
	104 U. L. . .	8 13 21·5	1 15 42·5		
	107 U. L. . .	8 17 01	1 11 08·5		
	107 L. L. . .	8 19 09·5	1 08 57		
Sept. 18	105 U. L. . .	8 02 39·5	1 24 08	297 10 43 51	
	105 L. L. . .	8 05 03	1 22 40·5	291 9 59 18	
	102 U. L. . .	8 06 35	1 20 48	44 23	
	102 L. L. . .	8 09 09·5	1 18 47		
	104 U. L. . .	8 10 34·5	1 16 47		
	106 U. L. . .	8 14 28	1 12 48		
	106 L. L. . .	8 17 02	1 10 39·5		
Sept. 21	109 U. L. . .	8 01 21	1 23 35	297 10 42 19	
	100 L. L. . .	8 05 31·5	1 21 27·5	291 9 57 36	
	102 U. L. . .	8 05 21·5	1 19 34·5	44 33	
	102 L. L. . .	8 07 31	1 17 26·5	292 10 42 19	
	104 U. L. . .	8 09 23·5	1 15 34·5	Earn. 10 53 17	
	104 L. L. . .	8 11 31	1 13 27	8 10 41	
	107 U. L. . .	8 15 23	1 08 36		

1802 Month.	Double Altitudes of the Sun.	Times by Chronometer 297. Forenoon.	Afternoon.	Comparison of the Chronometers with 297.	Remarks.
	°	h. ′ ″	h. ′ ″	h. ′ ″	
Sept. 24	101 U. L. ..	8 08 22·5	1 14 17	297 10 41 15	
	101 L. L. ..	8 10 21	1 12 08·5	291 9 55 32	
	106 U. L. ..	8 12 13	1 10 16·5	0 45 56	
	103 L. L. ..	8 14 21	1 08 09	297 10 41 15	
	108 U. L. ..	8 16 12	1 06 16·5	Earn. 10 53 13	
	102 L. L. ..	8 18 21·5	1 04 08·5	11 58	
	113 U. L. ..	8 20 12·5	1 02 16·5		
	115 L. L. ..	8 22 22	1 00 08·5		
25	102 U. L. ..	8 03 39	1 17 30	297 10 40 26	
	107 L. L. ..	8 05 48·5	1 15 21	291 9 55 42	
	104 U. L. ..	8 07 30·5	1 13 29·5	44 54	
	105 L. L. ..	8 09 43	1 11 21·5	297 10 40 26	
	105 U. L. ..	8 11 29·5	1 09 30	Earn. 10 53 07	
	106 L. L. ..	8 13 40	1 07 20·5	12 21	
	108 U. L. ..	8 15 41	1 05 31		
	108 L. L. ..	8 17 40·5	1 03 22		
Oct. 17	101 U. L. ..	8 00 31	1 19 07	297 10 35 00	
	101 L. L. ..	8 02 43·5	1 07 54	291 9 44 22	
	103 U. L. ..	8 04 28	1 05 35·5	50 48	
	103 L. L. ..	8 06 52·5	1 03 43·5	297 10 35 22	
	101 U. L. ..	8 08 48	1 01 47	Earn. 10 52 55	
	105 L. L. ..	8 11 00	12 19 35	17 35	
	107 U. L. ..	8 13 01	12 17 30·5		
	107 L. L. ..	8 15 14·5	12 55 23		
29	100 U. L. ..	7 58 38	1 11 43·5	297 10 35 13	
	100 L. L. ..	8 00 30	1 09 31	291 9 44 05	
	102 U. L. ..	8 02 42·5	1 07 33·5	51 04	
	102 L. L. ..	8 05 01	1 05 20·5	297 10 35 13	
	101 U. L. ..	8 06 58·5	1 03 18	Earn. 10 53 02	
	106 L. L. ..	8 13 23	12 50 58	27 43	
	108 U. L. ..	8 15 10·5	12 55 01·5		
		Chronometer 291.		with 291.	
30	100 L. L. ..	7 19 54	12 11 31	291 9 41 00	
	102 U. L. ..	7 22 55	12 09 54	297 10 34 35	
	102 L. L. ..	7 18 11	12 07 34·5	0 53 00	
	104 U. L. ..	7 17 11·5	12 05 38	291 9 41 00	
	106 L. L. ..	7 23 52·5	11 38 34	Earn. 10 54 16	
				1 19 50	
				291 9 39 03	
				297 10 35 08	
				0 55 03	
Nov. 13	107 U. L. ..	7 28 03·5	11 08 34·5	291 9 39 03	
	107 L. L. ..	7 30 33	11 47 29	Earn. 10 57 06·5	
				1 18 03·5	
12	101 U. L. ..	7 14 43	12 03 13	291 9 39 01	
	101 L. L. ..	7 17 11	12 0 44·5	297 10 35 18	
	103 U. L. ..	7 19 17·5	11 58 38	0 56 17	
	103 L. L. ..	7 21 47	11 56 08	291 9 39 01	
	105 U. L. ..	7 23 53·5	11 54 00·5	Earn. 10 57 32	
	105 L. L. ..	7 25 26·5	11 51 30·5	1 18 31	
	107 U. L. ..	7 28 33	11 49 02		
	107 L. L. ..	7 31 04·5	11 46 50·5		

1822 Month.	Double Altitudes of the Sun.	Times by Chronometer 291. Forenoon.	Afternoon.	Comparison of the Chronometers with 291.	Remarks.
	°	h. ′ ″	h. ′ ″	h. ′ ″	
Nov. 14	101 U. L. ..	7 15 00·5	12 02 39	291 9 38 55	
	101 L. L. ..	7 17 30	12 03 08·5	297 10 35 26	
	103 U. L. ..	7 19 43	11 58 01·5	0 56 31	
	103 L. L. ..	7 22 13	11 55 30·5	291 9 38 55	
	105 U. L. ..	7 24 21	11 53 23	Earn. 10 37 49	
	105 L. L. ..	7 26 51·5	11 50 52·5	1 17 54	
	107 U. L. ..	7 29 00	11 48 44		
	107 L. L. ..	7 31 32	11 46 12·5		
		Chronometer 297.		with 297.	
16	101 U. L. ..	8 12 53	12 58 35	297 10 35 47	
	101 L. L. ..	8 15 24	12 56 04	291 9 38 54	
	103 U. L. ..	8 17 32·5	12 53 55·5	0 56 53	
	103 L. L. ..	8 20 04·5	12 51 24	297 10 35 47	
	105 U. L. ..	8 22 13	12 48 14·5	Earn. 10 38 35	
	105 L. L. ..	8 24 45	12 45 42	22 18	
	107 U. L. ..	8 26 55·5	12 44 32		
	107 L. L. ..	8 29 29	12 41 59		
17	101 U. L. ..	8 12 30	12 58 18	297 10 36 00	
	101 L. L. ..	8 16 00·5	12 55 47	291 9 38 53	
	103 U. L. ..	8 18 15·5	12 53 38	0 57 24	
	103 L. L. ..	8 20 57	12 51 01·5	297 10 36 00	
	105 U. L. ..	8 22 57	12 48 55	Earn. 10 38 10	
	105 L. L. ..	8 25 30·5	12 45 22	22 50	
	107 U. L. ..	8 27 41·5	12 44 13		
	107 L. L. ..	8 30 10	12 41 36·5		

For the Bearing of Mount Ophir

and the Variation of the Compass.

1822 Month.	Times by Chronometer 297.	Angle between the Sun's nearest Limb and Mount Ophir.	Error of Sextant.	Remarks.
	h. ′ ″	° ′ ″	′ ″	
Nov. 15	4 21 22	18 31 50	−0 45	
16	4 43 20	18 54 15	0 45	
	4 45 32	17 25 10	0 45	
	4 46 56	17 43 10	0 45	
	4 48 44	18 00 10	0 45	
16	4 50 05	18 16 30	0 45	
	4 51 40	18 38 10	0 45	
	4 52 52	18 54 20	0 45	
	4 54 01	19 11 30	0 45	

At Pulo Panjong Station.

Between	and	Angles. ° ′ ″
Pulo Tellicor	Pulo Pahgunge	105 32 30
	Ayer Bongby Hill	53 16 30
	Lubwaun Hill	82 22 00
	Goonum Allyee	75 44 00
	Mount Ophir (or Pamanian) . . .	44 02 30
	High Peak on the Range	53 21 00
	Kurboyee Hill	32 22 00
Elevation of Mount Ophir		2 00 00

At Pulo Tellicor.

Observation

for the Latitude.

1827 Month.	Name.	Meridian Altitude.	Error of Sextant.	Height of the Therm.	Height of the Barom.	Remarks.
		° ′ ″	′ ″	°	Inches.	
Sept. 19	Sun's L. L. . .	88 11 43 N.	—0 43	88·5	29·21	

For the Time and Longitude of

Pulo Tellicor.

1827 Month.	Double Altitudes of the Sun.	Times by Chronometer 397, Fourmain.	Error of Sextant.	Comparison of the Chronometers with 397.	Remarks.
	°	h. ′ ″	′ ″	h. ′ ″	
Sept. 19	88 U. L. . .	7 34 15·5	—0 44	397 7 50 00	
	88 L. L. . .	7 36 22	0 44	397 7 00 32	
	90 U. L. . .	7 42 14·5	0 44	0 44 28	
	90 L. L. . .	7 44 23	0 44		
	92 U. L. . .	7 46 16	0 44		
	92 L. L. . .	7 48 24	0 44		

At Pulo Tellicor.

Between	and	Angles. ° ′ ″
Pulo Panjong	Pulo Pahgunge	21 26 00
	Ayer Bongby Hill.	48 01 30
	Lubwaun Hill.	39 24 00
	Goonum Allyee	50 54 15
	Mount Ophir.	150 59 00
	High Peak on the Range.	76 21 00
	Kurboyee Hill.	87 26 00
Pulo Pahgunge.	Pangalauren Hill.	21 14 15

For the Time and Longitude of

Pulo Pangaugo.

1822 Month.	Double Altitudes of the Sun.	Timeshy Chronometer 297. Forenoon.	Error of Sextant.	Comparison of the Chronometers with 297.	Remarks.
	°	h. ′ ″	′ ″	h. ′ ″	
Sept. 19	113 U. L. . .	8 27 10	−0 46	297 8 40 00	
	113 L. L. . .	8 19 18	0 44	291 7 55 04·5	
	113 U. L. . .	8 31 09	0 44	44 55·5	
	115 L. L. . .	8 23 17	0 44		
	117 U. L. . .	8 35 10	0 44		
	117 L. L. . .	8 27 18	0 44		

Pulo Pangaugo.

between	and	Angles.
Pulo Telloes	Pungalaeres.	° ′ ″ 105 54 50

At NATTAL.

Observations for the Latitude.

1822 Month.	Stars Observed.	Double Meridian Altitude.	Error of Sextant.	Height of the Therm.	Height of the Barom.	Remarks.
		° ′ ″	′ ″			
Oct. 9	α Pavonis . . .	64 19 30 s.	−0 50			
	γ Cygni . . .	101 47 10 n.	0 50			
	α Cygni . . .	91 68 20	0 50			
	γ Gruis . . .	102 55 10 s.	0 50			
	α Gruis . . .	83 18 15	0 50			
	β Gruis . . .	83 18 20	0 50			
	α Pegasi . . .	102 20 30 n.	0 50			
	Fomalhaut . .	117 49 10 s.	0 50			
	β Pegasi . . .	120 34 15 n.	0 50			
	α Andromeda. . .	106 55 20	0 50			
	α Phœnicis . .	92 66 25 s.	0 50			

For the Time and Longitude of Nattal Station.

1822 Month.	Double Altitudes of the Sun.	Times by Chronometer 291. Forenoon.	Times by Chronometer 291. Afternoon.	Comparison of the Chronometers with 297.	Remarks.
	°	h. ′ ″	h. ′ ″	h. ′ ″	
Oct. 8	100 U. L. . .	7 58 50	1 17 10	297 10 40 00	
	100 L. L. . .	8 01 09	1 15 02	291 9 51 49	
	102 U. L. . .	8 03 02	1 13 09	48 11	
	102 L. L. . .	8 05 13	1 10 58·5		
	104 U. L. . .	8 07 05	1 09 04		
	104 L. L. . .	8 09 18	1 06 34		
	106 U. L. . .	8 11 10·5	1 05 51·5		
	106 L. L. . .	8 13 23	1 02 54·5		

For the Time and Longitude of

Naval Hill.

1824 Month.	Double Altitudes of the Sun.	Times by Chronometer 207 Forenoon.	Error of Sextant.	Comparisons of the Chronometers with 207.	Remarks.
	°	h. ′ ″	′ ″		
Oct. 12	84 U. L. ..	7 48 39	–0 50		
	84 L. L. ..	7 44 44	0 50		
	86 U. L. ..	7 46 25	0 50		
	86 L. L. ..	7 48 45	0 50		
	90 U. L. ..	7 50 26·5	0 50		
	90 L. L. ..	7 52 49	0 50		

For the Time and Longitude of

Ayer Bonjoy.

1824 Month.	Double Altitudes of the Sun.	Times by Chronometer 207. Afternoon.	Error of Sextant.	Comparisons of the Chronometers with 207.	Remarks.
	°	h. ′ ″	′ ″		
Oct. 16	90 U. L. ..	1 31 29	–0 45		*Ayer Boughy* Station about 20 yards North of the Flag Staff.
	90 L. L. ..	1 33 34	0 45		
	88 U. L. ..	1 35 47	0 45		
	88 L. L. ..	1 37 58	0 45		
	86 U. L. ..	1 39 51·5	0 45		
	86 L. L. ..	1 42 03·5	0 45		

At Ayer Bonjoy.

Between	and	Angles. ° ′ ″
Labuan Hill	Pulo Panjang Station.	74 31 00
	Pulo Panjang Hill...	80 10 20
	Pangalaurn Hills.	58 43 30
	Tanjong Lorunah Hill	41 55 10
	Bolon Sultyer Point	67 18 30

At Pulo Panjang—South East Extremity.

Observations for the Longitude.

1824 Month.	Names.	Double Meridian Altitude.	Error of Sextant.	Remarks.
		° ′ ″	′ ″	
Dec. 17	Achernar ..	63 27 20 s.	–0 50	
	a Peneb ...	99 40 20 s.	0 50	
18	Sun's L. L. ..	139 48 40 s.	0 50	
18	Achernar ..	63 27 15	0 50	
	a Ariele ...	124 57 00 s.	0 50	
19	Sun's L. L. ..	139 28 55 s.	0 50	
	Achernar ..	63 27 23	0 50	
	a Peneb ...	81 47 05 s.	0 50	

For the Time, Longitude and Rates of Chronometers.

1822 Month.	Double Altitudes of the Sun.	Times by Chron. Earnshaw. Forenoon.	Afternoon.	Comparison of the Chronometers with Earnshaw.	Remarks.
	°	h. ′ ″	h. ′ ″	h. ′ ″	
Dec. 14	98 U. L. . .	8 55 45	1 36 42	Earn. 11 16 14	
	98 L. L. . .	8 58 30	1 33 38	391 9 45 05	
	100 U. L. . .	9 00 48	1 31 20	1 31 09	
	103 U. L. . .	9 06 07	1 25 30·5		
	103 L. L. . .	9 11 15	1 21 12		
	105 U. L. . .	9 13 38	1 18 49		
15	98 U. L. . .	8 56 41	1 37 18	Earn. 11 17 00	
	98 L. L. . .	8 59 22	1 34 35·5	391 9 45 26	
	100 U. L. . .	9 01 41·5	1 32 18·5	1 31 34	
	100 L. L. . .	9 04 27·5	1 29 31·5		
	102 U. L. . .	9 06 48	1 27 10·5		
	102 L. L. . .	9 09 30·5	1 24 24		
	104 U. L. . .	9 11 57·5	1 22 00·5		
	104 L. L. . .	9 14 40·5	1 19 12·5		
		Time by Chronometer 391.		with 391.	
18	104 U. L. . .	7 41 54·5	11 50 55	391 9 45 24	
	104 L. L. . .	7 44 43·5	11 48 04	Earn. 11 19 46	
	106 U. L. . .	7 47 09	11 45 38·5	1 33 02	
	106 L. L. . .	7 50 04·5	11 42 44		
	108 U. L. . .	7 52 09	11 40 17·5		
	108 L. L. . .	7 55 27	11 37 19		
	110 U. L. . .	7 57 58	11 34 48·5		
	110 L. L. . .	8 00 58·5	11 31 47		
20	98 U. L. . .	7 26 53	12 06 32	391 9 46 42	
	98 L. L. . .	7 29 37	12 03 47	Earn. 11 20 29	
	100 U. L. . .	7 31 54·5	12 01 18·5	1 33 47	
	100 L. L. . .	7 34 47	11 58 43		
	102 U. L. . .	7 37 03	11 56 27		
	102 L. L. . .	7 39 50·5	11 53 30·5		
	104 U. L. . .	7 42 14	11 51 10		
	104 L. L. . .	7 45 03	11 48 19		

For the Bearing of Pulo Gaunsah Lout and the Variation of the Compass.

1822 Month.	Times by Chronometer 391.	Angle between the Sun's several Limb and Pulo Gaunsah Lout.	Error of Sextant.	Remarks.
	h. ′ ″	° ′ ″	° ′	
Dec. 18	3 42 15 p.m.	124 01 15	−0 50	
20	3 43 33	123 49 30	0 50	

At Pulo Pinnee—South East Extremity.

between	*and*	Angles. °	′	″
Pulo Gaunsah Lout	Pulo Gaunsah	11	08	42
	Pulo Oolur	43	52	30
	Kurboyee Hill	41	22	40
	Mount Ophir	32	34	50
	Tooleechemanah Hill	53	03	28
	Lubwaun Hill	58	52	00
	Pungalaurm Hill	49	29	50
	Oojong Taun Hill	63	13	18
	Nellang Hill	76	06	40
	Peak N. E. of Ayer Bonghy	58	52	35
	Second Peak on the Range	72	30	30
	Trekne Hill or Mossong	15	06	35
Elevation of Mount Ophir		0	35	50
Elevation of Remarkable Hill N. E. of *Nuttal*		0	50	40

AT

PULO GAUNSAH LOUT,

108,78 Seconds

NORTH OF THE EQUATOR.

Experiments for ascertaining
The Length of the Pendulum.

1823. 13th *February* A. M.

Hygro. { Beginning 3 moist. / End 3 moist. — Barom. { Beginning 30,[illegible] / End 30,913 (Inches.)

Temperature.	Disc. Hid.	Disc. Reappeared.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
81·5	10 08 20	10 08 32	1,[illegible]
	10 19 50	10 20 07	1,[illegible]
82·5	10 31 29·5	10 31 42·5	1,11
	10 43 07	10 43 21·5	1,05
83·5	10 54 44	10 54 50·5	0,98

Hygro. { Begin 3 moist. / End 19 dry. — Barom. { Begin 30,[illegible] / End 30,[illegible]

84	11 05 27	11 05 37	1,[illegible]
	11 19 58	11 13 09·5	1,[illegible]
86	11 24 28	11 24 39	1,[illegible]
	11 35 58	11 36 07·5	1,[illegible]
88·5	11 47 25	11 47 33	1,[illegible]

Hygro. { Begin 30 dry. / End 30 dry. — Barom. { Begin 30,[illegible] / End 30,[illegible]

94	1 05 09·5	1 05 13	1,998
	1 16 29	1 16 29	1,910
96·5	1 27 37	1 27 47	1,130
	1 38 51	1 38 07	1,06
91·5	1 50 18	1 50 25	0,975

Hygro. { Begin 41 dry. / End 38 dry. — Barom. { Begin 30,140 / End 30,[illegible]

92	3 21 27	3 21 48	1,[illegible]
	3 32 58	3 33 10	1,[illegible]
93·5	3 44 20	3 44 32	1,[illegible]
	3 55 40	3 55 58	1,013
95·5	4 07 13	4 07 25	0,[illegible]

16th *February* A. M.

Hygro. { Begin 2 dry. / End 3 dry. — Barom. { Begin 30,[illegible] / End 30,[illegible]

82	7 42 54	7 43 06	1,[illegible]
	7 54 27	7 54 47	1,[illegible]
83	8 06 55	8 06 18	1,15
	8 17 42	8 17 55·5	1,07
83·5	8 29 20	8 29 30	0,[illegible]

16th *February* A. M.

Hygro. { Beginning 9 dry. / End 10 dry. — Barom. { Beginning 30,[illegible] / End 30,[illegible] (Inches.)

Temperature.	Disc. Hid.	Disc. Reappeared.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
84	10 33 10·5	10 33 22	1,[illegible]
	10 44 44	10 44 50	1,[illegible]
85	10 56 17	10 56 29	1,070
	11 07 55·5	11 08 03	0,[illegible]
87	11 19 22	11 19 33·5	0,[illegible]

Hygro. { Begin 18 dry. / End 27 dry. — Barom. { Begin 30,[illegible] / End 30,[illegible]

87	11 24 44	11 24 54	1,87
	11 36 10	11 36 19·5	1,[illegible]
90·5	11 47 35	11 47 44	1,[illegible]
	11 58 55	11 59 03	1,[illegible]
93·5	12 10 15·5	12 10 28·5	0,[illegible]

Hygro. { Begin 40 dry. / End 46 dry. — Barom. { Begin 30,[illegible] / End 30,[illegible]

90	1 29 50	1 29 00·5	1,[illegible]
	1 41 05	1 41 16	0,96
97	1 52 22	1 52 34	0,[illegible]
	2 03 39	2 03 52	0,[illegible]
97·5	2 14 57	2 15 15	0,[illegible]

Hygro. { Begin 48,5 dry. / End 44 dry. — Barom. { Begin 30,[illegible] / End 30,[illegible]

94·5	3 36 19	3 36 30	1,[illegible]
	3 47 38·5	3 47 50	1,[illegible]
90·5	3 59 09	3 59 18	1,[illegible]
	4 10 29	4 10 41	0,[illegible]
89	4 21 55·5	4 22 07	0,[illegible]

17th *February* A. M.

Hygro. { Begin 3 dry. / End 3 dry. — Barom. { Begin 30,[illegible] / End 30,[illegible]

89·75	6 55 25	6 55 28	1,[illegible]
	7 07 03	7 07 18	1,[illegible]
92·75	7 18 40	7 18 03	1,[illegible]
	7 30 27	7 30 42	0,[illegible]
95·5	7 40 11	7 40 24·5	0,[illegible]

17th February s. n.

Hygro. { Beginning 6 dry. / End 8 dry. — Barom. { Beginning 30,174 / End 30,173 (Inches.)

Temperature.	Dist. Hid.	Dist. Reappeared.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
80·5	9 53 58	9 56 09	1,935
	10 07 35·5	10 07 46	1,145
82	10 19 19	10 19 24	1,07
	10 30 40·5	10 31 01·5	0,94
82·5	10 42 17	10 42 20	0,955

Hygro. { Begin 8 dry. / End 15 dry. — Barom. { Begin 30,173 / End 30,173

83·5	10 59 11	10 59 21	1,165
84·25	11 02 43·5	11 02 56·5	1,005
85·3	11 15 19	11 15 30·5	1,02
86	11 26 12	11 27 04	0,93
87	11 38 23	11 38 29	0,94

Hygro. { Begin 24 dry. / End 43 dry. — Barom. { Begin 30,142 / End 30,142

83·5	12 59 19	12 59 55	1,035
84	1 10 28·5	1 10 39	0,955
84·5	1 21 15·5	1 21 29	0,960
85	1 32 46	1 32 56	0,92
84	1 44 08	1 44 20	0,773

Hygro. { Begin 40 dry. / End 28 dry. — Barom. { Begin 30,163 / End 30,163

86·5	3 02 39	3 02 51	1,005
86	3 23 51	3 24 02	1,02
86	3 45 22·5	3 45 34	0,95
85·5	3 56 27	3 57 10·5	0,875
85·5	4 08 31	3 08 46	0,81

18th February s. n.

Hygro. { Begin 8 dry. / End 8 dry. — Barom. { Begin 30,128 / End 30,128

79·5	7 45 54	7 46 50·5	1,09
80	7 58 03	7 58 14	1,09
80·5	8 09 43	8 09 54	1,105
80·5	8 21 12·5	8 21 20	1,09
80·75	8 33 03	8 33 18	0,97

18th February s. n.

Hygro. { Beginning 9,5 dry. / End 11 dry. — Barom. { Beginning 30,134 / End 30,134 (Inches.)

Temperature.	Dist. Hid.	Dist. Reappeared.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
82	9 47 55	9 48 02	1,205
82	9 59 31	9 59 46	1,183
82	10 11 11·5	10 11 24	1,19
82·5	10 22 48	10 22 59	1,055
82·7	10 34 27	10 34 29	1,005

Hygro. { Begin 99 dry. / End 40 dry. — Barom. { Begin 30,134 / End 30,134

87·5	11 45 15	11 45 25	1,33
91	11 59 29	11 59 49	1,30
92·5	12 11 01	12 11 10	1,02
93·5	12 22 24	12 22 34	1,04
94	12 33 44	12 33 53·5	0,97

Hygro. { Begin 50 dry. / End 44 dry. — Barom. { Begin 30,133 / End 30,133

96	1 49 41	1 49 51	1,175
97	2 01 57	2 02 06·5	1,005
97	2 12 13·5	2 12 23	1,015
99·5	2 23 30·5	2 23 40	0,960
94·5	2 34 49	2 34 49	0,875

Hygro. { Begin 44 dry. / End 43 dry. — Barom. { Begin 30,103 / End 30,103

95	4 01 29·5	4 01 39	1,07
94·5	4 12 49	4 12 58·5	1,105
94	4 24 08	4 24 19·5	1,11
93·75	4 35 29	4 35 49·5	1,025
93	4 46 53	4 47 04	0,90

19th February s. n.

Hygro. { Begin 16 dry. / End 16 dry. — Barom. { Begin 30,118 / End 30,118

81·5	7 28 58	7 28 59	1,070
81·5	7 53 19	7 53 30	1,075
81·5	8 01 58	8 00 09	1,095
81·75	8 13 35	8 13 40	1,17
82	8 25 12·5	8 25 25	1,04

18th *February* 1826.

Inches.

Barom. { Beginning 29,5 deg. / End 31 deg. }

Barom. { Beginning 30,130 / End 30,130 }

Temperature.	Dens. Hol.			Dens. Reappeared.			Arc of Vibration.
°	h.	'	"	h.	'	"	
85	9	58	48	9	58	58·5	1,20
85·5	10	06	53·5	10	08	25	1,215
83·5	10	16	03	10	16	33	1,130
83·75	10	27	49	10	27	56·5	1,84
84	10	29	15	10	29	30	0,50

Hygr. { Begin 32 deg. / End 37 deg. }

Barom. { Begin 30,132 / End 30,138 }

69·25	11	03	43	11	03	56	1,301
93	11	37	09	11	37	30	1,010
93·5	12	08	31·5	12	08	48	1,13
94·75	12	19	34	12	20	03	1,05
93·5	12	31	08	12	31	30·5	0,59

Hygr. { Begin 42 deg. / End 44 deg. }

Barom. { Begin 30,130 / End 30,133 }

97·5	1	37	22·5	1	37	38	1,873
92·5	1	48	20	1	48	45·5	1,150
97·5	1	59	59	2	00	06	1,11
97	2	11	13	2	11	30	1,003
95	2	22	34	2	22	46	0,50

Hygr. { Begin 50 deg. / End 50 deg. }

Barom. { Begin 30,130 / End 30,132 }

93·5	3	24	09	3	24	27	1,950
93·5	3	45	51	3	46	03	1,18
98·25	3	57	36	3	57	58	1,050
95·5	4	08	40·5	4	08	53	1,08
95·5	4	20	07	4	20	19	0,943

Hygr. { Begin 58 deg. / End 61 deg. }

Barom. { Begin 30,130 / End 30,130 }

95·5	4	32	28	4	33	49	1,515
93·5	4	57	01	4	57	35	1,15
98·5	5	08	34	5	08	45	1,18
97·5	5	20	03	5	20	17	1,11
95·5	5	31	27	5	31	49	0,94

19th *February* 1826.

Inches.

Barom. { Beginning 29 deg. / End 31 deg. }

Barom. { Beginning 30,132 / End 30,132 }

Temperature.	Dens. Hol.			Dens. Reappeared.			Arc of Vibration.
°	h.	'	"	h.	'	"	
93	9	51	53	9	47	09	1,195
91	9	53	39	9	53	45	1,03
91	7	05	17·5	7	05	31	0,97
91·5	7	16	30·5	7	17	03	0,99
91·5	7	05	43	7	05	30·5	0,92

Hygr. { Begin 14,5 deg. / End 18,5 deg. }

Barom. { Begin 30,140 / End 30,135 }

83	9	54	28	9	54	08·5	1,285
85·5	10	06	55	10	06	06	1,20
89·5	10	17	09	10	17	40	1,175
88	10	29	00	10	29	17	1,065
91·5	10	40	44	10	40	56	0,956

Hygr. { Begin 28 deg. / End 28 deg. }

Barom. { Begin 30,135 / End 30,134 }

84·5	10	59	48·5	10	59	59	1,255
85·5	11	06	07	11	06	27	1,84
87·5	11	29	24	11	12	03	1,10
88·5	11	24	38	11	24	20	1,075
89·75	11	35	35·5	11	36	07	1,00

Hygr. { Begin 31,5 deg. / End 42 deg. }

Barom. { Begin 30,141 / End 30,135 }

90	11	47	24	11	48	43	1,265
91	11	53	57	11	54	06	1,200
89·5	1	05	09	1	05	23	1,09
93	1	16	45	1	16	58·5	1,13
94	1	28	03·5	1	28	21	1,80

Hygr. { Begin 47 deg. / End 45 deg. }

Barom. { Begin 30,132 / End 30,132 }

93·5	2	04	45	2	04	46	1,039
95	2	16	03	2	16	14	1,25
95	2	27	22	2	27	34	1,128
91	2	38	44	2	38	55	1,09
93·5	2	50	07	2	50	15	1,719

23d February s. n.

Hygro. { Beginning 11 deg. / End 12,5 deg. } Barom. { Beginning 30,155 / End 30,158 } Inches.

Temperature.	Disc. Hid.	Disc. Reappeared.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
81	7 51 09	7 51 19	1,095
81	8 02 49	8 02 59	1,33
81	8 14 19	8 14 40·5	1,24
81·5	8 21 10·5	8 21 22	1,15
81·5	8 28 34	8 29 05	1,07

Hygro. { Begin 13 deg. / End 19 deg. } Barom. { Begin 30,153 / End 30,153 }

82·5	9 46 09	9 46 29	1,095
82·5	9 57 40·5	9 59 00·5	1,025
82·5	10 10 29	10 10 45	1,19
82·75	10 21 13·5	10 21 25	1,025
83	10 32 35	10 32 57	0,945

Hygro. { Begin 23 deg. / End 40 deg. } Barom. { Begin 30,153 / End 30,153 }

88·5	11 40 05	11 40 14	1,33
89	11 51 55	11 51 46	1,23
89·75	12 03 07·5	12 03 13	1,15
91	12 14 51	12 14 41·5	1,07
92	12 25 58	12 25 59	0,99

Hygro. { Begin 43 deg. / End 48 deg. } Barom. { Begin 30,143 / End 30,143 }

92·5	1 34 29·5	1 34 38	1,27
94	1 45 51	1 45 49	1,075
95	1 57 11·5	1 57 49	1,19
95·75	2 08 29	2 8 41·5	1,10
95	2 20 53	2 21 03	1,015

Hygro. { Begin 56 deg. / End 57 deg. } Barom. { Begin 30,093 / End 30,093 }

93·5	3 44 14	3 44 24	1,165
94	3 55 57	3 55 48	1,15
95	4 07 01	4 07 13	1,04
91	4 18 08	4 18 41	0,97
91	4 29 35	4 29 00	0,90

23d February s. n.

Hygro. { Beginning 57 deg. / End 60 deg. } Barom. { Beginning 30,103 / End 30,087 } Inches.

Temperature.	Disc. Hid.	Disc. Reappeared.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
90·5	4 34 10	4 34 27	1,33
89	4 45 44	4 45 55	1,275
88	4 57 14	4 57 20	1,19
87	5 08 47	5 08 59	1,10
86·5	5 20 23·5	5 20 33	1,025

23d February s. n.

Hygro. { Begin 15 deg. / End 17 deg. } Barom. { Begin 30,093 / End 30,100 }

80·5	6 32 07	6 32 21	1,295
80·5	6 43 49	6 44 02	1,23
80·5	6 55 31	6 55 44	1,14
80·5	7 07 13	7 07 28	1,05
80·5	7 18 58	7 18 19	0,98

Hygro. { Begin 19 deg. / End 21 deg. } Barom. { Begin 30,133 / End 30,133 }

83	9 44 07	9 44 18	1,075
83	9 55 49	9 55 57	1,18
83	10 07 26	10 07 37	1,09
83,5	10 19 07	10 19 18	1,00
84	10 31 49	10 32 02	0,995

Hygro. { Begin 21 deg. / End 28 deg. } Barom. { Begin 30,133 / End 30,133 }

84	10 34 02	10 35 02	1,08
84·5	10 46 29	10 46 29·5	1,19
85	10 58 09	10 58 18	1,005
86	11 09 45	11 09 56	1,030
87	11 21 01	11 21 33	0,995

Hygro. { Begin 47 deg. / End 50 deg. } Barom. { Begin 30,113 / End 30,113 }

91	12 20 53	12 27 00	1,31
90·5	12 38 15	12 38 24	1,265
90·5	12 49 29·5	12 49 40	1,15
93	1 01 02	1 01 12	1,075
93	1 12 50·5	1 12 57	1,05

13d February a. m.

Hygro. { Beginning 55 deg. / End 53 deg. — Barom. { Beginning 30,063 / End 30,063 (Inches.)

Temperature.	Disc. Hid.	Disc. Reappeared.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
93	3 06 15	3 08 44·5	1,31
93	3 19 24	3 19 44	1,22
93	3 30 53	3 31 05	1,14
95	3 42 11	3 42 29	1,008
92·5	3 53 38	3 53 54	0,99

24th February a. m.

Hygro. { Begin 20 deg. / End 23 deg. — Barom. { Begin 30,094 / End 30,085

82	7 33 24	7 33 33	1,325
82·5	7 45 05	7 45 16	1,23
83	7 56 47	7 56 59	1,14
83	8 08 31	8 08 43	1,05
83	8 20 16	8 20 23	0,975

Hygro. { Begin 26 deg. / End 28 deg. — Barom. { Begin 30,113 / End 30,143

83·5	9 43 39	9 43 51	1,375
83·75	9 55 10·5	9 55 32	1,175
83·75	10 07 00	10 07 12	1,03
84	10 18 41	10 18 54	1,035
84	10 30 25	10 30 37	0,945

Hygro. { Begin 38 deg. / End 43 deg. — Barom. { Begin 30,113 / End 30,088

90·75	11 53 54	11 57 04	1,099
91	12 00 07	12 00 36	1,107
91·5	12 14 00	12 14 10	1,099
99	12 45 55	12 45 45	0,995
99	12 57 06	12 57 17	0,99

Hygro. { Begin 57 deg. / End 55 deg. — Barom. { Begin 30,073 / End 30,063

98	1 43 05	1 43 34	1,37
98	1 54 17	1 54 30	1,05
98	2 05 50	2 06 00	1,16
97·5	2 17 19	2 17 09	1,075
97·5	2 28 40	2 28 50	1,00

24th February a. m.

Hygro. { Beginning 58 deg. / End 56 deg. — Barom. { Beginning 30,044 / End 30,033 (Inches.)

Temperature.	Disc. Hid.	Disc. Reappeared.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
95	3 49 38	3 49 50	1,86
94·5	4 01 00	4 01 13	1,16
94	4 12 25	4 12 38	1,08
93	4 23 49	4 24 02	1,04
92	4 35 17	4 35 31	0,94

Hygro. { Begin 50 deg. / End 54 deg. — Barom. { Begin 30,033 / End 30,044

92	4 30 40	4 30 18	1,30
90	4 42 07	4 42 20	1,22
89	5 00 37	5 00 50	1,15
87	5 14 09	5 14 22	1,075
86·5	5 25 44	5 25 58	1,005

25th February a. m.

Hygro. { Begin 8 deg. / End 1 deg. — Barom. { Begin 30,073 / End 30,095

78·5	7 30 02	7 30 55	1,45
78·5	7 32 37	7 32 39	1,35
78·5	7 44 12	7 44 24	1,25
79	7 55 58	7 55 13	1,175
79	8 07 45	8 07 58	1,005

Hygro. { Begin 1 deg. / End 9 deg. — Barom. { Begin 30,097 / End 30,113

79·5	9 15 52	9 16 03	1,25
79·5	9 27 40·5	9 27 52	1,205
79·5	9 38 27	9 38 38	1,025
79·5	9 51 13	9 51 29	0,94
79·75	10 03 20	10 03 14	0,87

Hygro. { Begin 1 noon. / End 19 deg. — Barom. { Begin 30,114 / End 30,063

82	11 15 44	11 15 56	1,505
83	11 27 07	11 27 28	1,40
83	11 39 07	11 39 16	1,29
83	11 50 48	11 50 58	1,175
83	12 02 20	12 02 41	1,015

28th February s. n.

Barom. Beginning 30,053
Ends 30,050

Hygrom. Beginning 33 deg.
Ends 39 deg.

Temperature.	Diam. H.S.	Diam. Reciprocated.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
80·5	1 20 56	1 21 20·5	1,275
80·5	1 20 57	1 21 38	1,33
80	1 42 50	1 44 10	1,00
80·5	1 50 30	1 55 44	0,556
80	8 07 05	8 07 13	0,1054

28th February s. n.

Barom. Beginning 30,053
Ends 30,050

Hygrom. Beginning 39 deg.
Ends 46 deg.

Temperature.	Diam. H.S.	Diam. Reciprocated.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
80	3 34 56	3 35 09	1,400
80·5	3 40 10	3 40 29·5	1,50
80·75	3 37 44·5	3 38 05	1,313
80·5	3 49 17·5	3 49 39·5	1,13
80	4 00 40·5	4 00 59·5	1,005

28th February s. n.

Barom. Beginning 30,050
Ends 30,047

Hygrom. Beginning 39 deg.
Ends 46 deg.

Temperature.	Diam. H.S.	Diam. Reciprocated.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
80·5	3 35 39	3 35 58	1,365
80	3 47 07	3 47 15	1,4
80·75	3 38 04	3 38 23·5	1,31
80	4 00 40·5	4 00 52	1,017
80	4 01 09	4 01 19	1,133

28th February s. n.

Barom. Beginning 30,047
Ends 30,044

Hygrom. Beginning 46 deg.
Ends 52 deg.

Temperature.	Diam. H.S.	Diam. Reciprocated.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
81	7 05 55	7 07 09	1,83
81·5	7 08 50	7 08 40	1,765
81·75	7 00 00·5	7 00 00	1,50
82	8 01 20	8 00 03·5	1,14
82	8 12 35	8 12 47·5	1,015

1st March s. n.

Barom. Beginning 30,044
Ends 30,041

Hygrom. Beginning 52 deg.
Ends 58 deg.

Temperature.	Diam. H.S.	Diam. Reciprocated.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
82	9 05 00	9 05 20·5	1,38
83	9 27 39	9 27 52	1,18
83	10 03 53	10 10 04	1,005
82·5	10 01 52	10 01 45	1,005
82·5	10 20 15	10 20 27	0,915

1st March s. n.

Barom. Beginning 30,041
Ends 30,038

Hygrom. Beginning 58 deg.
Ends 64 deg.

Temperature.	Diam. H.S.	Diam. Reciprocated.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
83	11 42 30	11 43 08	1,68
83	11 54 57	11 54 30	1,955
83·25	12 09 30·5	12 09 05·5	1,8
83	12 17 55	12 17 39·5	1,105
83·25	12 01 57	12 00 03	1,005

1st March s. n.

Barom. Beginning 30,038
Ends 30,035

Hygrom. Beginning 3 moist.
Ends 09 moist.

Temperature.	Diam. H.S.	Diam. Reciprocated.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
80·5	7 51 34·5	7 51 09·5	1,075
80·5	8 00 50	8 01 10	1,150
80·5	8 18 05	8 18 38	1,059
80·5	8 00 20	8 00 45	0,959
80·75	8 28 57·5	8 29 21	0,90

1st March s. n.

Barom. Beginning 30,035
Ends 30,032

Hygrom. Beginning 1 deg.
Ends 4 deg.

Temperature.	Diam. H.S.	Diam. Reciprocated.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
80·75	9 32 34	9 32 45	1,090
80·75	10 00 10	10 00 30	1,150
80·5	10 16 07	10 17 09	1,150
80	9 59 20·5	10 00 01	1,009
80	10 49 22·5	10 49 37	0,905

1st March s. m.

Hygro. { Beginning 21 deg. / End 37 deg. } Barom. { Beginning 30,051 / End 30,029 } Inches.

Temperature.	Dist. Hid.			Dist. Reappeared.			Arc of Vibration.
°	h.	′	″	h.	′	″	
69	11	37	11	11	53	20	1,235
69·5	12	04	43	12	04	59·5	1,16
70	12	16	14·5	12	16	24	1,08
71	12	27	45·5	12	27	51	1,01
72	12	39	15·5	12	39	26	0,94

Hygro. { Begin 51 deg. / End 59 deg. } Barom. { Begin 30,014 / End 30,018 }

84	1	47	08	1	47	17	1,303
84·75	1	58	20	1	58	40	1,225
85·2	2	09	53	2	10	03	1,14
84	2	21	16·5	2	21	26	1,065
85	2	32	29	2	34	18	0,987

Hygro. { Begin 53 deg. / End 59 deg. } Barom. { Begin 30,013 / End 30,009 }

84	3	57	19·5	3	57	28	1,425
85·5	4	08	44	4	08	51	1,32
86	4	20	05	4	20	15	1,22
86·25	4	31	27·5	4	31	41·5	1,14
87	4	42	56	4	43	08	0,96

Hygro. { Begin 59 deg. / End 59 deg. } Barom. { Begin 30,009 / End 30,008 }

91·5	4	56	33	4	57	04	1,32
90·1	5	08	20	5	08	31·5	1,20
89	5	19	49	5	20	01·5	1,115
88	5	31	20	5	31	33	1,04
87·5	5	42	55·5	5	43	00	0,99

2d March s. m.

Hygro. { Begin 27 moist. / End 29 moist. } Barom. { Begin 30,033 / End 30,019 }

76	7	09	23	7	09	32	1,335
78	7	21	03	7	21	11·5	1,225
79	7	32	46·5	7	32	51	1,120
79·5	7	44	35	7	44	47	1,100
79·5	7	56	02	7	56	23	1,005

3d March s. m.

Hygro. { Beginning 27 moist. / End 25 moist. } Barom. { Beginning 30,030 / End 30,009 } Inches.

Temperature.	Dist. Hid.			Dist. Reappeared.			Arc of Vibration.
°	h.	′	″	h.	′	″	
78	9	44	50	9	45	01	1,725
79	9	55	31	9	55	49	1,215
79·2	10	07	13·5	10	07	27	1,19
79·5	10	18	39·5	10	18	49	1,055
79·5	10	30	41·5	10	30	34	0,95

Hygro. { Begin 0 deg. / End 14 deg. } Barom. { Begin 30,071 / End 30,071 }

84·5	11	59	03	11	59	13	1,275
85	12	10	30	12	10	49	1,185
85·2	12	22	53	12	22	20	1,10
85·5	12	33	39	12	34	12·5	1,025
85·5	12	45	30	12	45	41	0,95

Hygro. { Begin 24 deg. / End 30 deg. } Barom. { Begin 30,033 / End 30,018 }

86·5	1	57	06	1	57	15	1,25
87·75	2	08	43	2	08	57	1,155
88	2	20	17	2	20	27	1,065
88	2	31	54	2	32	04	0,975
88·2	2	43	30	2	43	41	0,905

Hygro. { Begin 28 deg. / End 30 deg. } Barom. { Begin 30,012 / End 30,013 }

89·5	4	05	34	4	05	43·5	1,22
89·5	4	17	02	4	17	19	1,015
89	4	28	39	4	28	49	1,13
90	4	40	00	4	40	11	1,065
87·5	4	51	30	4	51	40	0,980

4th March s. m.

Hygro. { Begin 32 moist. / End 39 moist. } Barom. { Begin 30,058 / End 30,072 }

89·5	9	52	53	9	53	03	1,305
89·5	10	04	35·5	10	04	45·5	1,22
91	10	16	15·5	10	16	28	1,15
91·25	10	28	03	10	28	14·5	1,055
91	10	39	47·5	10	39	50	0,95

4th March s. n.

Hygro. Beginning 22 moist. End 14 moist. Barom. Beginning 30,073 End 30,043 (Inches.)

Temperature.	Disc. Hid.	Disc. Reappeared.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
85	11 51 50	11 52 00	1,40
84	12 03 29	12 03 38	1,345
84	12 15 04	12 15 13	1,37
83·5	12 26 41·5	12 26 50	1,305
83·5	12 38 21	12 38 31	1,00

Hygro. Begin 17 moist. End 10 moist. Barom. Begin 30,038 End 30,038

84	12 56 12	12 56 22	1,395
83	1 07 50	1 04 00	1,98
83·2	1 19 29	1 19 40	1,195
83·5	1 31 09·5	1 31 20	1,107
83	1 42 43	1 42 39	1,025

Hygro. Begin 6,5 dry. End 5 dry. Barom. Begin 30,036 End 30,038

83·5	3 17 10	3 17 25	1,415
83	3 28 53	3 29 09	1,36
83	3 40 48	3 40 39·5	1,105
83·5	3 51 07	3 52 17	1,15
83·5	4 03 43·5	4 03 56	1,075

5th March s. n.

Hygro. Begin 3 moist. End 1 dry. Barom. Begin 30,138 End 30,132

81	7 40 07	7 40 16	1,245
81	7 51 53	7 51 59	1,02
81·5	8 03 34	8 03 43·5	1,125
81·5	8 15 16·5	8 15 28	1,045
81·5	8 27 03	8 27 14	0,975

Hygro. Begin 11 dry. End 10·5 dry. Barom. Begin 30,133 End 30,128

82	9 51 03	9 51 12	1,24
82	10 02 46	10 02 55	1,23
82·1	10 14 28	10 14 38	1,125
83	10 26 10	10 26 20	1,05
83·2	10 37 50·5	10 38 03	0,98

6th March s. n.

Hygro. Beginning 16 dry. End 20 dry. Barom. Beginning 30,133 End 30,133 (Inches.)

Temperature.	Disc. Hid.	Disc. Reappeared.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
82·5	11 52 30	11 52 43·5	1,43
82·2	12 04 10	12 04 23·5	1,295
82·2	12 15 57·5	12 15 07	1,03
82	12 27 39	12 27 49	1,11
82	12 39 23	12 39 33	1,03

Hygro. Begin 20 dry. End 21 dry. Barom. Begin 30,082 End 30,080

84·5	1 54 11	1 54 30	1,515
84·5	2 05 51	2 05 00	1,34
84	2 17 30·5	2 17 40	1,13
84	2 29 14	2 29 24	1,025
84	2 40 57	2 41 08	0,95

Hygro. Begin 24 dry. End 22 dry. Barom. Begin 30,083 End 30,078

84	3 51 46	3 51 56	1,713
83·5	4 03 21	4 03 35	1,305
83·5	4 15 08	4 15 10	1,19
83	4 26 49	4 26 39	1,04
83	4 38 34	4 38 44	0,97

10th March s. n.

Hygro. Begin 3 moist. End 7,5 moist. Barom. Begin 30,119 End 30,119

80	6 21 34	6 21 45	1,00
80	6 33 16	6 33 47	1,295
80	6 45 00	6 45 11	1,23
80·3	6 56 44	6 56 55·5	1,11
80·8	7 08 27	7 08 39	1,03

Hygro. Begin 9 dry. End 5 dry. Barom. Begin 30,157 End 30,157

81·5	9 57 11	9 57 20	1,210
82	10 08 53	10 09 05	1,09
82·2	10 20 36	10 20 48	1,195
82·5	10 32 23	10 32 33	1,025
83	10 44 09	10 44 19·5	0,93

10th *March* a. m.

Hygr. { Begin 0 deg. / End 11 deg. } Barom. { Begin 30,131 / End 30,189 }

Temperature.	Pend. Heat.	Pend. Reaggregated.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
83·5	10 57 + 25·5	10 57 39·5	1,75
83·5	11 00 33	11 00 53	1,15
84	11 00 57	11 01 07	1,03
84	11 01 41	11 01 51·5	1,005
84	11 01 47	11 01 59	0,923

Hygr. { Begin 91 deg. / End 94 deg. } Barom. { Begin 30,128 / End 30,102 }

86	10 57 41	10 58 09	1,63
87·5	11 00 15·5	11 00 48	1,29
87·5	11 00 50·5	11 00 59·5	1,02
87·5	11 01 25	11 01 37	1,10
88·1	11 01 00	11 01 13·5	1,01

Hygr. { Begin 91 deg. / End 91 deg. } Barom. { Begin 30,078 / End 30,060 }

89·5	3 11 41·5	3 11 59	1,353
89·5	3 12 15·5	3 12 25	1,83
90	3 12 41·5	3 12 50	1,13
90·5	3 13 19	3 13 29	1,06
90·5	3 13 52	3 13 59	0,99

13th *March* a. m.

Hygr. { Begin 17 moist. / End 19 moist. } Barom. { Begin 30,055 / End 30,080 }

79·5	6 22 02	6 22 20	1,573
80	6 23 23	6 23 33	1,18
80·5	6 24 05·5	6 24 15	1,10
80·5	7 19 55	7 20 08	1,003
81	7 20 41	7 20 50·5	0,98

Hygr. { Begin 10 moist. / End 3 moist. } Barom. { Begin 30,123 / End 30,166 }

88	9 41 40·5	9 41 56	1,79
88	9 59 21·5	9 59 41	1,215
89·5	10 19 11	10 20 04·5	1,11
89	10 19 52	10 17 09	1,053
89·5	10 20 42·5	10 20 59·5	0,96

19th *March* a. m.

Hygr. { Begin 3 moist. / End 8 deg. } Barom. { Begin 30,165 / End 30,150 }

Temperature.	Pend. Heat.	Pend. Reaggregated.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
82·5	10 20 03	10 21 24	1,805
84·5	10 44 05	10 44 14	1,3
85	10 55 41·5	10 55 55·5	1,2
85·5	11 07 03	11 07 24	1,1
85·5	11 19 45	11 19 14·5	1,01

Hygr. { Begin 2 deg. / End 1 deg. } Barom. { Begin 30,095 / End 30,077 }

89·5	1 32 25	1 33 34	1,14
89·5	1 43 08	1 43 11	1,355
89·5	1 56 37	1 56 45·5	1,195
90·5	2 09 15	2 09 26·5	1,11
87·5	2 15 51·5	2 20 01·5	1,73

Hygr. { Begin 5 deg. / End 4 deg. } Barom. { Begin 30,078 / End 30,064 }

85·5	2 32 51·5	2 33 03	1,28
87	2 44 30·5	2 44 38·5	1,15
86·5	2 56 05	2 56 14	1,105
86·5	3 07 41·5	3 07 51·5	1,015
86	3 19 19	3 19 29	0,955

15th *March* a. m.

Hygr. { Begin 13 moist. / End 14 moist. } Barom. { Begin 30,093 / End 30,105 }

89	7 00 53	7 00 24	1,38
89·5	7 48 06	7 48 13	1,18
91	7 55 43	7 58 50·5	1,5
91	8 03 21	8 03 28	1,0
91·5	8 17 07	8 17 17·5	1,103

Hygr. { Begin 21 moist. / End 19 moist. } Barom. { Begin 30,119 / End 30,130 }

92·5	9 30 20·5	9 30 39·5	1,8
93·5	10 02 00	10 02 09	1,3
93·5	10 13 40·5	10 13 50	1,2
93	10 25 21·5	10 25 31·5	1,115
94	10 37 03	10 37 14	1,09

13th March s. m.

Hygr. { Beginning 10 dy. / End 95 dy. } Barom. { Beginning Feet 30,178 / End 30,179 }

Temperature.	Direct. Hrs. ' "	Retrograd. Hrs. ' "	Arc of Vibration.
°	h. ' "	h. ' "	
89	11 52 59	11 53 27	1,44
91	11 54 59	11 55 56	1,395
90·5	11 55 57·5	11 56 26	1,37
91·5	11 57 57·5	11 58 6	1,325
92·5	11 59 57	12 0 26	1,29

Hygr. { Begin 84 dy. / End 43 dy. } Barom. { Begin 30,182 / End 30,093 }

85	1 44 59	1 44 47	1,40
85	1 45 59	1 46 47·5	1,39
85	1 47 59·5	1 47 55	1,365
86·5	1 48 44	1 48 35	1,315
86·5	1 50 57	1 50 17	1,255

Hygr. { Begin 86 dy. / End 87 dy. } Barom. { Begin 30,093 / End 30,076 }

91·5	2 45 59	2 45 18	1,35
92·5	2 48 59·5	2 48 40·5	1,29
93	2 50 55	2 50 04	1,26
93·5	2 51 51	2 51 36·5	1,23
94·5	2 53 46	2 53 36	1,19

14th March s. m.

Hygr. { Begin 4 morn. / End 4 morn. } Barom. { Begin 30,275 / End 30,080 }

90·4	0 32 32	0 32 59	1,48
93·4	0 34 05	0 34 13	1,3
93·5	0 45 55	0 45 39·5	1,2
93	0 57 55	0 57 41	1,21
91·5	1 59 19	1 59 39·5	1,205

Hygr. { Begin 5 morn. / End 3 morn. } Barom. { Begin 30,133 / End 30,133 }

89·5	0 57 10	0 57 55	1,48
93	0 48 57	0 49 50·5	1,31
93·5	10 59 59	10 58 46	1,205
93·5	10 10 51	10 10 31	1,115
94	10 24 56	10 24 15	1,055

15th March s. m.

Hygr. { Begin 3 morn. / End 3 dy. } Barom. { Begin Feet 30,132 / End 30,129 }

89	10 57 54·5	10 57 42	1,338
89·5	10 58 17	10 58 22	1,29
95·5	10 59 59	11 0 01	1,205
97	11 2 30·5	11 02 49	1,135
99	11 14 09	11 14 16	1,068

Hygr. { Begin 89 dy. / End 94 dy. } Barom. { Begin 30,129 / End 30,110 }

94	1 45 59·5	1 45 47·5	1,43
97	1 48 49	1 48 58	1,38
97	1 48 59·5	1 49 08	1,34
97·4	1 50 57	1 50 51	1,31
99·4	2 10 48·5	2 10 54·5	1,07

Hygr. { Begin 96 dy. / End 92 dy. } Barom. { Begin 30,095 / End 30,076 }

96·5	2 14 59	2 15 09·5	1,8
93	2 56 15	2 56 28	1,2
91	2 57 57	2 57 46	1,91
91·5	2 49 51	2 49 10·5	1,198
96·5	3 01 05	3 00 54·5	1,05

Hygr. { Begin 92 dy. / End 91 dy. } Barom. { Begin 30,076 / End 30,056 }

90·5	3 03 55	3 03 44	1,489
89	3 16 55	3 15 04·5	1,283
93·5	3 00 17	3 00 07	1,075
93·5	3 37 41	3 37 50	1,150
95·5	3 48 06	3 48 10·5	1,08

16th March s. m.

Hygr. { Begin 28 morn. / End 23 morn. } Barom. { Begin 30,139 / End 30,143 }

79·5	7 12 59	7 12 39·5	1,48
77	7 24 59·5	7 24 18·5	1,37
77	7 35 56	7 36 09	1,27
77·5	7 47 44	7 47 58	1,18
77·5	7 59 33	7 59 48	1,10

1804 March 2. P.M.

Hygr. { Beginning 57 moist. / End 28 moist.

Barom. { Beginning 30,161 Inches. / End 30,170

Temperature.	Diss. Hol.	Diss. Reappeared.	Arc of Vibration.
°	° ′ ″	° ′ ″	°
79·4	9 29 03·5	9 33 34	1,47
80	9 27 03	9 27 27	1,50
80·1	9 26 57	9 29 02	1,35
80·7	10 18 27	10 03 47	1,15
80·5	10 09 33	10 09 34	1,07

Hygr. { Begin 47 moist. / End 1 moist.

Barom. { Begin 30,173 / End 30,135

84	11 20 19	11 26 03	1,41
84·3	11 17 34·5	11 19 03·5	1,21
85	11 18 30	11 19 41·5	1,9
85	12 11 13	12 11 05·5	1,105
85	12 02 59	12 03 09	1,05

Hygr. { Begin 5 dry. / End 19 dry.

Barom. { Begin 30,193 / End 30,116

84	1 33 03	1 36 04	1,4
84·3	1 47 09·5	1 47 30·5	1,205
85	1 38 05	1 39 14·5	1,3
85	2 16 59	2 19 09	1,11
85·2	2 27 10	2 22 05	1,085

Hygr. { Begin 19 dry. / End 27 dry.

Barom. { Begin 30,110 / End 30,110

80·2	2 23 59	2 24 08	1,07
80·7	2 45 09·5	2 45 20	1,015
80	2 37 05	2 37 09·5	1,015
80	3 06 55	3 08 49·5	1,19
80·1	3 30 05	3 30 15	1,035

1804 March 2. P.M.

Hygr. { Begin 7 dry. / End 9 dry.

Barom. { Begin 30,056 / End 30,003

80·5	6 55 41·5	6 59 54	1,11
81	7 03 09	7 08 39	1,39
81·3	7 14 16	7 14 29	1,07
81·2	7 30 02	7 30 13	1,12
81·3	7 37 51·5	7 38 09·5	1,015

1804 March 2. P.M.

Hygr. { Begin 1 dry. / End 1 dry.

Barom. { Begin 30,201 Inches. / End 30,202

Temperature.	Diss. Hol.	Diss. Reappeared.	Arc of Vibration.
°	° ′ ″	° ′ ″	°
83·5	9 13 04·5	9 15 13·5	1,185
83·2	9 06 48	9 06 54	1,21
83	9 28 07	9 28 37	1,09
83	9 30 13·5	9 30 29	1,13
83·3	10 01 37	10 00 08	1,035

Hygr. { Begin 7 dry. / End 14 dry.

Barom. { Begin 30,078 / End 30,073

80·5	11 28 32	11 30 31·5	1,09
81	11 25 22·5	11 28 32	1,09
82·5	11 29 58	11 30 03	1,09
82·7	11 51 30	11 51 33	1,105
84·6	12 03 54·5	12 04 04·5	1,085

Hygr. { Begin 43 dry. / End 43 dry.

Barom. { Begin 30,050 / End 30,043

80·3	1 09 37	1 08 43	1,185
81	1 13 59	1 14 09	1,09
82·8	1 24 05	1 23 30	1,09
84·3	1 35 44	1 36 33	1,105
86	1 45 28	1 45 39·5	1,085

Hygr. { Begin 46 dry. / End 47 dry.

Barom. { Begin 30,043 / End 30,038

80·3	1 58 06	1 59 16	1,13
78·4	2 00 09·5	2 00 39·5	1,23
84	2 58 59·5	2 01 05	1,09
84·3	2 59 15	2 59 33	1,175
84·5	3 03 40	3 03 49·5	1,09

1804 March 2. P.M.

Hygr. { Begin 63 moist. / End 19 moist.

Barom. { Begin 30,003 / End 30,003

80·5	7 03 39	7 05 49·5	1,185
80	7 27 39	7 27 34	1,205
79·8	7 49 19	7 49 09	1,13
79·5	8 10 23	8 06 03	1,24
80	8 32 40	8 28 06·5	1,09

13th March A. M.

Hygro. { Beginning 19 moist. End 16 moist. Barom. { Beginning 30,081 End 30,063 (Inches.)

Temperature.	Dear. Hid.	Dear. Reappeared.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
81·9	9 37 36	9 37 40	1,035
82	9 40 19	9 40 29·5	1,2
82	10 01 04	10 01 14	1,035
82·1	10 12 40	10 12 30·5	1,11
82·9	10 24 35	10 24 48	1,025

Hygro. { Begin 7 moist. End 14 dry. Barom. { Begin 30,073 End 30,063

89·5	11 29 02	11 29 11·5	1,275
89·7	11 50 37	11 50 45·5	1,275
90·1	12 04 11·5	12 04 23	1,18
90·2	12 13 46·5	12 13 55·5	1,09
90·3	12 25 20·5	12 25 29·5	1,01

Hygro. { Begin 29 dry. End 40 dry. Barom. { Begin 30,040 End 30,033

85·5	1 37 50·5	1 37 58	1,38
85·7	1 48 11·5	1 49 22	1,38
86	2 05 30	2 05 47·5	1,18
86·9	2 12 02·5	2 12 11·5	1,105
85·5	2 23 20	2 23 29·5	1,025

Hygro. { Begin 54 dry. End 52 dry. Barom. { Begin 30,073 End 30,058

95	3 30 38·5	3 37 02·5	1,42
94·4	3 48 23	3 48 31	1,32
94·2	3 59 48	3 59 57	1,325
93·6	4 11 15·5	4 11 24·5	1,135
93	4 22 45	4 22 55·5	1,15

20th March A. M.

Hygro. { Beginning 10 moist. End 12 moist. Barom. { Beginning 30,055 End 30,076 (Inches.)

Temperature.	Dear. Hid.	Dear. Reappeared.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
79	6 37 41	6 37 50	1,395
79	6 49 25	6 49 34	1,415
79·1	7 01 09	7 01 18·5	1,51
79·6	7 12 55	7 13 05	1,265
79·9	7 24 43	7 24 53	1,11

Hygro. { Begin 19 moist. End 17 moist. Barom. { Begin 30,108 End 30,125

80·8	9 31 07·5	9 31 16	1,515
81	9 42 50	9 42 58·5	1,415
81	9 54 39	9 54 44	1,293
81·3	10 06 23	10 06 30	1,19
81·6	10 18 07	10 18 17	1,095

Hygro. { Begin 5 moist. End 4 dry. Barom. { Begin 30,072 End 30,073

85	11 23 02·5	11 23 10·5	1,495
85·3	11 34 40	11 34 48	1,38
85·5	11 46 17	11 46 25·5	1,29
85·9	11 57 55	11 58 04	1,19
85·6	12 09 35·5	12 09 43·5	1,10

Hygro. { Begin 5 dry. End 4 dry. Barom. { Begin 30,063 End 30,046

83	1 08 39·5	1 08 41	1,43
82	1 20 17	1 20 25	1,33
82·6	1 31 50·5	1 32 07·5	1,24
83	1 43 42·5	1 43 51·5	1,135
83	1 55 20	1 55 30	1,07

Hygro. { Begin 12 dry. End 20 dry. Barom. { Begin 30,063 End 30,023

80·5	3 23 20·5	3 23 28	1,41
80·5	3 35 05·5	3 35 14·5	1,31
80·4	3 46 43	3 46 52	1,22
85·9	3 58 21	3 58 29	1,13
85·9	4 10 01	4 10 11	1,045

Observations

For the LATITUDE of Palo Gaucho Lake

1822 Month.	Names.	Double Meridian Altitude.	Error of Sextant.	Height of the Therm.	Height of the Barom.	Remarks.
		° ′ ″	° ′	°		
Dec. 23	Sun's L. L. . .	132 30 25 s.	−0 40	80·2	30·1	
	Achernar . .	63 43 25	0 40	84	30·12	
	ζ Persei . . .	60 33 10 n.	0 40	82·2	30·0	
	Capella . . .	88 29 10	0 40	84	30·01	
24	Sun's L. L. . .	132 32 05 s.	0 45	86	30	
	ι Andromeda . .	100 43 15 n.	0 45	82·8	30·08	
	δ Cassiopeia . .	61 29 30	0 45	82·8	30·08	
	Achernar . .	63 43 30 s.	0 45	82·2	30·06	
	γ Andromeda . .	97 08 05 n.	0 45	83·2	30·06	
	γ Persei . . .	74 29 20	0 45	82·5	30·03	
	δ Persei . . .	69 33 15	0 45	82·2	30·0	
	α Persei . . .	81 39 15	0 45	83	30·10	
25	Sun's L. L. . .	132 33 40 s.	0 45	80·8	30·0	
26	Sun's L. L. . .	132 37 15	0 45	89	30·0	
27	Sun's L. L. . .	132 41 10	0 45	91·3	30·10	
30	Sun's L. L. . .	132 59 30	0 45	80·8	30·03	
31	Sun's L. L. . .	133 06 35	0 45	88·5	30·03	
1823						
Jan. 1	Sun's L. L. . .	133 15 55	0 45	87	30	
	Achernar . .	63 43 40	0 50	84·3	30·1	
	γ Andromeda . .	97 08 25 n.	0 50	83·2	30·04	
	γ Persei . . .	74 29 45	0 50	81·5	30·04	
	ζ Persei . . .	69 33 45	0 50	82·2	30·04	
	α Persei . . .	81 39 15	0 50	82·2	30·1	
	δ Persei . . .	85 44 10	0 50	82·1	30·1	
	ζ Persei . . .	117 23 30	0 50	82·1	30·1	
	Capella . . .	88 29 30	0 50	82·1	30·1	
	β Tauri . . .	123 11 30	0 50	81	30·06	
	ζ Canis Maj. . .	119 50 55 s.	0 50	81	30·03	
2	Sun's L. L. . .	133 25 35	0 55	88·5	30	
	Capella . . .	88 29 40 n.	0 50	83	30·1	
	β Tauri . . .	123 11 45	0 50	82·8	30·04	
4	Achernar . . .	63 43 40 s.	0 50	84·8	30·09	
	γ Andromeda . .	97 08 30 n.	0 50	83·7	30·08	
6	Sun's L. L. . .	134 13 30 s.	0 50	88·2	30·04	
7	α Persei . . .	81 39 25 n.	0 50	84	30·0	
	δ Persei . . .	85 40 40	0 50	84	30·03	
	Capella . . .	88 29 20	0 50	83·6	30·03	
	β Tauri . . .	123 11 25	0 50	83·9	30·01	
	α Columbæ . .	111 38 25 s.	0 50	84·4	30·10	
	ζ Canis Maj. . .	119 59 45	0 50	81·6	30·0	
	Canopus . .	74 49 45	0 50	77·2	30	
8	Sun's L. L. . .	134 42 55	0 50	85	30	
	γ Andromeda . .	97 09 00 n.	0 50	84·5	30·05	
	α Arietis . . .	134 50 20	0 50	84	30·06	
	γ Persei . . .	74 29 45	0 50	84	30·06	

1823 Month.		Names.	Double Meridian Altitude.			Error of Sextant.	Height of the Thorm.	Height of the Barom.	Remarks.
			°	′	″	′ ″	°		
Jan.	8	β Persei . . .	99	33	10	−0 59	83·8	30·08	
		α Persei . . .	81	39	33	0 59	83·8	30·08	
		δ Persei . . .	85	40	45	0 59	83·8	30·08	
		ζ Persei . . .	117	23	45	0 59	82	30·08	
		ε Persei . . .	101	07	10	0 59	82	30·08	
		Capella . . .	88	29	35	0 59	82·5	30·10	
		β Tauri . . .	123	11	20	0 59	82	30·12	
		δ Columbæ . .	108	18	05 s.	0 59	80·8	30·12	
		ζ Canis Maj. . .	119	39	35	0 59	79	30·15	
		Canopus . .	74	47	30	0 59	78·1	30·15	
	9	Sun's L. L. . .	134	39	00	0 59	84·6	30·07	
		γ Andromeda . .	87	09	55 s.	0 59	83·7	30·09	
		γ Persei . . .	74	29	25	0 59	82·5	30·09	
		β Persei . . .	99	33	35	0 59	82·5	30·10	
	10	Sun's L. L. . .	135	15	45 s.	0 59	86	30·1	
		β Persei . . .	99	33	25 s.	0 59	83	30·04	
		δ Persei . . .	85	40	35	0 59	82·8	30·04	
		ε Persei . . .	101	07	05	0 59	82·8	30·04	
		Capella . . .	88	29	50	0 59	82·5	30·08	
		β Tauri . . .	123	11	35	0 59	82·5	30·08	
	11	Sun's L. L. . .	135	33	45	0 59	83·4	30·08	
	17	β Persei . . .	99	33	25	0 59	82·7	30·10	
	19	α Persei . . .	81	39	35	0 59	82·7	30·10	
	20	Capella . . .	88	29	15	1 02	83	30·00	
	21	γ Persei . . .	74	29	30	1 02	83·1	30·1	
		β Persei . . .	99	33	35	1 02	83·1	30·1	
		α Persei . . .	81	39	40	1 02	83	30·1	
		ζ Persei . . .	117	23	40	1 02	83	30·10	
		ε Persei . . .	101	07	10	1 02	82·5	30·09	
		Capella . . .	88	29	25	1 02	82·5	30·00	
		β Tauri . . .	123	11	35	1 02	82·2	30·00	
		ε Canis Maj. . .	122	39	15 s.	1 02	82	30·00	
	25	Capella . . .	88	29	15 s.	1 02	83	30·02	
		β Tauri . . .	123	11	35	1 02	83	30·02	
		ε Canis Maj. . .	122	29	55 s.	1 02	82·5	30·00	
		δ Canis Maj. . .	127	44	20	1 02	82·5	30·00	
		ε Navis . . .	106	24	45	1 02	82·1	30·00	
		ε Canis Maj. . .	122	03	25	1 02	82	30·1	
	27	α Persei . . .	81	39	35 s.	1 02	83·2	30·10	
		ζ Persei . . .	117	23	35	1 02	83·2	30·1	
		δ Persei . . .	85	40	45	1 02	83	30·00	
		Capella . . .	88	29	25	1 02	82·3	30·00	
		β Tauri . . .	123	11	20	1 02	82·3	30·10	
		α Columbæ . .	111	38	05 s.	1 02	81	30·1	
		β Columbæ . .	108	17	50	1 02	80·6	30·1	
		ζ Canis Maj. . .	119	39	40	1 02	78·8	31·05	
		Canopus . .	74	47	30	1 02	77·2	30·00	
		ε Canis Maj. . .	122	30	25	1 02	77	30·00	
		δ Canis Maj. . .	127	44	10	1 02	77	30·00	
		ε Navis . . .	106	24	40	1 02	80·6	30·00	

1802 Month.		Names.	Double Meridian Altitude.			Error of Sextant.		Height of the Thermt.	Height of the Barom.	Remarks.
			°	′	″	°	′			
Jan.	21	ν Canis Maj. . .	110	05	50 L.	−1	05	82·4	30·09	
Feb.	8	ζ Canis Maj. . .	110	56	30	1	05	82·7	30·04	
		Canopus . .	74	47	05	1	03	83·7	30·01	
		ι Canis Maj. . .	103	58	25	1	03	83	30·07	
		ξ Canis Maj. . .	107	44	55	1	03	83	30·03	
		τ Navis . . .	106	04	55	1	05	84	30·07	
		Castor . . .	113	20	30 n.	1	03	83	30·19	
		Pollux . . .	103	10	05	1	03	83	30·10	
	8	Capella . . .	88	09	20	0	55	82·6	30·08	
		β Tauri . . .	103	11	15	0	55	83	30·04	
		ζ Canis Maj. . .	110	56	25	0	55	82·9	30·08	
		Canopus . .	74	47	05 n.	0	55	77	30·08	
		τ Navis . . .	92	53	15	0	55	79·5	30·06	
		ν Canis Maj. . .	110	50	25	0	55	79·5	30·16	
		ξ Canis Maj. . .	107	44	05	0	55	79·5	30·11	
		τ Navis . . .	106	04	50	0	55	80·5	30·10	
		ν Canis Maj. . .	110	05	05	0	55	79	30·13	
		Castor . . .	113	20	45 n.	0	55	78	30·13	
		Pollux . . .	103	10	15	0	55	79	30·13	
	2	Navis . . .	100	37	05 n.	0	55	76	30·12	
	8	Capella . . .	88	09	05 n.	0	55	80·6	30·11	
		β Tauri . . .	103	11	00	0	55	80	30·10	
		α Columbæ . .	111	28	15 n.	0	58	81·5	30·08	
		τ Antlia . . .	90	16	10 n.	0	58	81·5	30·09	
		ζ Canis Maj. . .	110	56	05 n.	0	58	81·5	30·09	
		Canopus . .	74	47	15	0	58	82·5	30·09	
		τ Navis . . .	92	53	20	0	58	80·5	30·09	
		ν Canis Maj. . .	110	50	10	0	58	81·2	30·07	
		ξ Canis Maj. . .	107	44	00	0	58	80	30·06	
		τ Navis . . .	106	04	40	0	58	80	30·05	
		ν Canis Maj. . .	110	05	10	0	58	80	30·05	
		Castor . . .	113	20	05 n.	0	58	80·6	30·05	
		Pollux . . .	103	10	00	0	58	80·6	30·05	
	2	Navis . . .	100	37	30 n.	0	58	80·5	30·1	
		τ Navis . . .	92	53	55	0	58	80·5	30·1	
		τ Navis . . .	71	52	10	0	58	80·5	30·1	
		ν Canis Maj. . .	87	08	50 n.	0	58	83	30·04	
	18	α Columbæ . .	111	28	05 n.	1	05	84·2	30·05	
		τ Antlia . . .	90	16	35 n.	1	05	84·2	30·10	
		ζ Canis Maj. . .	110	56	40 n.	1	00	84·2	30·1	
		Canopus . .	74	47	50	1	00	84·5	30·1	
		τ Navis . . .	92	53	00	1	00	84·2	30·1	
		ν Canis Maj. . .	110	50	10	1	00	84·2	30·03	
		ξ Canis Maj. . .	107	44	55	1	00	84·2	30·07	
		τ Navis . . .	106	04	05	1	00	84	30·05	
		Castor . . .	113	21	00 n.	1	00	84	30·05	
		Pollux . . .	103	11	05	1	00	84	30·05	
		ζ Navis . . .	100	37	35 n.	1	00	83·5	30·05	
		τ Navis . . .	92	53	45	1	00	83·5	30·1	
		τ Navis . . .	71	51	55	1	00	83·5	30·1	
	19	Capella . . .	88	09	10 n.	1	00	83·6	30·06	

1819 Month.	Names.	Double Meridian Altitude.	Error of Sextant.	Height of the Therm.	Height of the Barom.	Remarks.
		° ′ ″	° ′	°		
Feb. 11	β Aurigæ . . .	90 15 55 s.	−1 00	84·8	30·09	
	ζ Canis Maj. . .	119 59 55 s.	1 00	84	30·08	
	Canopus . .	74 47 60	1 00	84	30·10	
	γ Canis Maj. . .	122 30 55	1 00	84	30·1	
	δ Canis Maj. . .	127 44 30	1 00	83·5	30·1	
	Castor . . .	115 33 55 s.	1 00	83·5	30·1	
	Pollux . . .	123 12 25	1 00	83·5	30·11	
	ζ Navis . . .	100 57 45 s.	1 00	83	30·11	
	γ Navis . . .	86 21 05	1 00	83	30·10	
	δ Navis . . .	71 52 10	1 00	83	30·10	
12	Capella . . .	88 29 05 s.	0 50	84·6	30·07	
	β Tauri . . .	123 12 05	0 50	84·6	30·07	
	β Aurigæ . . .	90 16 05	0 50	84·6	30·07	
	ζ Canis Maj. . .	119 59 35 s.	0 50	84	30·07	
	Canopus . .	74 47 10	0 50	84	30·09	
	δ Navis . . .	93 53 15	0 50	84	30·03	
	Pollux . . .	123 12 15 s.	0 50	83·5	30·1	
	ζ Navis . . .	100 57 45 s.	0 50	83·5	30·1	
	γ Navis . . .	86 21 15	0 50	83	30·1	
	δ Navis . . .	42 03 10	0 50	83	30·10	
13	Capella . . .	88 29 10 s.	0 50	84·1	30·12	
	β Tauri . . .	123 11 55	0 50	84·1	30·12	
	ζ Canis Maj. . .	119 59 45 s.	0 50	86·8	30·06	
	β Aurigæ . . .	90 15 55 s.	0 50	86·8	30·06	
	Canopus . .	74 47 15 s.	0 50	86·5	30·06	
	δ Navis . . .	93 53 30	0 50	86·5	30·05	
	ε Canis Maj. . .	119 59 20	0 50	86	30·05	
	δ Canis Maj. . .	127 44 10	0 50	86	30·02	
	γ Navis . . .	100 56 35	0 50	85·5	30·02	
	Pollux . . .	123 12 15 s.	0 50	85	30·0	
	ζ Navis . . .	100 57 45 s.	0 50	84	30	
	δ Navis . . .	71 52 10	0 50	83·5	30	
	ε Canis Maj. . .	82 59 10 s.	0 50	83	30	
	ε Navis . . .	91 52 05 s.	0 50	82·7	30·0	
	δ Navis . . .	42 03 00	0 50	82·7	30·0	
	χ Navis . . .	71 59 05	0 50	82·7	30·0	
19	Canopus . .	74 47 23	0 50	82	30·07	
20	ζ Canis Maj. . .	119 59 35	0 50	82	30·07	
	Canopus . .	74 47 10	0 50	82	30·09	
	δ Navis . . .	93 53 05	0 50	81·5	30·09	
	ε Canis Maj. . .	119 59 10	0 50	81·5	30·07	
	δ Canis Maj. . .	127 44 20	0 50	81·5	30·02	
	ε Navis . . .	100 56 20	0 50	81·5	30·04	
	η Canis Maj. . .	129 03 15	0 50	81	30·04	
	Castor . . .	115 34 10 s.	0 50	81	30·04	
	Pollux . . .	123 12 10	0 50	81	30·03	
23	Capella . . .	88 29 15	0 50	78·2	30·02	
	β Tauri . . .	123 11 50	0 50	78·2	30·02	
	α Columbæ . .	111 37 55 s.	0 50	77·9	30·02	
	β Aurigæ . . .	90 15 40 s.	0 50	77·9	30·04	
	Canopus . .	74 47 15 s.	0 50	77·5	30·04	

Observations

for finding the RATE of the CLOCK during the period,

while the Pendulum Experiments were making:

Also Comparisons, for the Rates of the Chronometers.

1823 Month.	Double Altitudes of the Sun.	Times by the Clock. Forenoon.	Times by the Clock. Afternoon.	Remarks.
	°	h. ′ ″	h. ′ ″	*Comparison of Chronometers.*
Feb. 14	98 U. L.	9 36 43·5	2 58 07	
	98 L. L.	9 39 54·5	2 50 04	
	100 U. L.	9 41 02	2 48 03·5	
	100 L. L.	9 43 21·5	2 45 47	
	102 U. L.	9 45 12·5	2 43 49	
	102 L. L.	9 47 30·5	2 41 30	
15	103 U. L.	9 47 01	2 42 03	
	103 L. L.	9 49 18	2 39 44·5	
	105 U. L.	9 51 18	2 37 46·5	
	105 L. L.	9 53 37	2 35 20·5	
	107 U. L.	9 55 27·5	2 33 27	
	107 L. L.	9 57 55·5	2 31 07	
16	100 U. L.	9 44 25	2 44 33·5	h. ′ ″
	100 L. L.	9 46 43·5	2 42 14·5	*Clock.* 12 16 00
	102 U. L.	9 49 41	2 40 17	*Earn.* 11 53 56·5
	102 L. L.	9 51 00	2 37 38	22 03·5
	104 U. L.	9 52 57·5	2 36 09	
	104 L. L.	9 53 17	2 29 41	
18	95 U. L.	9 28 45	2 59 56	*Clock.* 12 15 00
	95 L. L.	9 31 02·5	2 57 29·5	*Earn.* 11 23 29
	97 U. L.	9 32 56	2 55 44	0 21 31
	97 L. L.	9 35 13	2 53 27·5	*Clock.* 12 16 00
	99 U. L.	9 37 09	2 51 30	*Earn.* 9 51 16
	99 L. L.	9 39 25·5	2 49 14·5	2 24 44
	101 U. L.	9 41 23	2 47 17·5	
	101 L. L.	9 43 39	2 45 01	
19	97 U. L.	9 32 09	2 55 59	*Clock.* 12 18 00
	97 L. L.	9 34 48	2 53 43	*Earn.* 11 56 44
	101 U. L.	9 42 55	2 47 34	0 23 18
	101 L. L.	9 43 18	2 45 17·5	*Clock.* 12 19 00
	102 U. L.	9 45 08	2 43 21	*Earn.* 9 54 05
	102 L. L.	9 47 24·5	2 41 05	2 24 55
20	95 U. L.	9 27 53	3 00 24	*Clock.* 12 18 00
	95 L. L.	9 30 08	2 58 08	*Earn.* 11 57 01
	97 U. L.	9 32 03	2 56 19	20 59
	97 L. L.	9 34 19·5	2 53 56·5	*Clock.* 12 19 00
	99 U. L.	9 36 13·5	2 52 01·5	*Earn.* 9 53 16
	99 L. L.	9 38 30	2 49 45·5	2 25 44
	101 U. L.	9 40 26	2 47 49	
	101 L. L.	9 42 43	2 45 33	

Month.	Double Altitudes of the Sun.	Times by the Clock. Forenoon.	Times by the Clock. Afternoon.	Remarks.
	°	h. ′ ″	h. ′ ″	Comparison of Chronometers.
Feb. 21	99 L. L.	9 37 08	2 49 01·5	
	101 U. L.	9 39 02	2 47 08	
	101 L. L.	9 41 19	2 44 51·5	
22	95 U. L.	9 40 05·5	2 50 31	h. ′ ″
	95 L. L.	9 48 20	2 57 36	Clock. 12 16 00
	97 U. L.	9 39 15	2 55 41	Earn. 11 56 28
	97 L. L.	9 39 30	2 53 09	0 19 32
	99 U. L.	9 34 23	2 51 39	Clock. 12 17 00
	99 L. L.	9 36 40·5	2 49 15·5	291. 9 58 30
	101 U. L.	9 38 55·5	2 47 20·5	2 18 30
	101 L. L.	9 40 56	2 45 03·5	
23	95 U. L.	9 25 40	2 50 39	Clock. 12 14 00
	95 L. L.	9 27 54	2 57 44	Earn. 11 54 45
	97 U. L.	9 40 44	2 55 50·5	0 19 15
	97 L. L.	9 32 03	2 53 33·5	Clock. 12 15 00
	99 U. L.	9 33 37	2 51 41·5	291. 9 58 21
	99 L. L.	9 36 13	2 49 20	2 18 30
	101 U. L.	9 38 06·5	2 47 20·5	
	101 L. L.	9 40 21	2 45 17	
24	95 U. L.	9 25 12	2 50 07	Clock. 12 16 00
	95 L. L.	9 27 26	2 57 12	Earn. 11 57 03
	97 U. L.	9 29 10·5	2 55 19	0 18 57
	97 L. L.	9 31 33·5	2 53 45	Clock. 12 17 00
	99 U. L.	9 33 28	2 51 50	291. 9 58 12
	99 L. L.	9 35 43	2 49 30·5	2 18 48
	101 U. L.	9 37 36	2 47 43	
	101 L. L.	9 39 51·5	2 45 27	
25	125 U. L.	10 19 33	1 55 23	Clock. 12 21 00
	125 L. L.	10 31 54	1 53 04	Earn. 12 02 05
	129 U. L.	10 33 02	1 49 30·5	0 18 55
	129 L. L.	10 38 22	1 48 27	Clock. 12 22 00
	129 U. L.	10 42 33	1 42 20	291. 9 37 40
	132 L. L.	10 44 34	1 40 05	2 24 20
26	99 U. L.	9 36 29·5	2 58 15·5	Clock. 12 15 00
	99 L. L.	9 38 35	2 56 06	Earn. 11 56 45
	98 U. L.	9 30 28	2 54 02·5	0 18 15
	98 L. L.	9 32 40	2 51 33·5	Clock. 12 16 00
	103 U. L.	9 34 36	2 50 01·5	291. 9 58 30
	103 L. L.	9 36 50	2 47 47	2 21 19
	102 U. L.	9 38 43	2 45 34	
	102 L. L.	9 40 58	2 43 42	

Month.	Double Altitudes of the Sun.	Times of the Clock. Forenoon.	Afternoon.	Remarks.
		h. ′ ″	h. ′ ″	*Comparison of Chronometers.*
Feb. 27	96 U. L.	9 25 17	2 57 40	h. ′ ″
	96 L. L.	9 27 30·5	2 55 28	Clock. 12 18 00
	98 U. L.	9 29 23	2 53 55	Eaw. 12 00 43
	98 L. L.	9 31 37	2 51 22	9 17 20
	100 U. L.	9 33 29·5	2 49 30	Clock. 12 19 00
	100 L. L.	9 35 41	2 47 15	201. 9 54 17
	102 U. L.	9 37 30·5	2 45 20·5	2 21 43
	102 L. L.	9 39 51	2 43 08	
March 1	97 U. L.	9 26 27	2 55 47	Clock. 12 17 00
	97 L. L.	9 28 39·5	2 53 33·5	Eaw. 12 00 17·25
	99 U. L.	9 30 33	2 51 41	18 40·75
	99 L. L.	9 32 45	2 49 19·5	Clock. 12 18 00
	101 U. L.	9 34 30	2 47 35	201. 9 52 53
	101 L. L.	9 36 51	2 45 22·5	2 25 07
	103 U. L.	9 38 41	2 43 29·5	
	103 L. L.	9 40 57·5	2 41 13·5	
2	97 U. L.	9 29 32	2 55 59·5	Clock. 12 17 00
	97 L. L.	9 27 45	2 53 36	Eaw. 12 00 59
	99 U. L.	9 29 41	2 51 46	16 01
	99 L. L.	9 31 53	2 49 31	Clock. 12 19 00
				201. 9 52 30
				2 23 30
4	96 L. L.	9 23 00	2 55 30·5	Clock. 12 21 00
	98 U. L.	9 27 19	2 53 48	Eaw. 12 00 21
	98 L. L.	9 29 23·5	2 51 30·5	15 39
	100 U. L.	9 31 14	2 49 44·5	Clock. 12 22 19
	100 L. L.	9 33 00	2 47 32	201. 9 56 19
	102 U. L.	9 35 09	2 45 40·5	2 25 41
	102 L. L.	9 37 22	2 43 29	
6	95 U. L.	9 19 56	2 59 07	Clock. 12 21 00
	95 L. L.	9 21 07	2 56 56	Eaw. 12 17 21
	97 U. L.	9 22 57·5	2 55 04·5	9 13 23
	97 L. L.	9 25 08·5	2 52 53	Clock. 12 22 00
	99 U. L.	9 26 59	2 51 02	201. 12 18 10
	99 L. L.	9 29 11	2 48 51·5	2 23 30
	101 U. L.	9 31 02	2 45 59·5	
	101 L. L.	9 33 13·5	2 44 49	
8	95 U. L.	9 18 33·5	2 59 09·5	Clock. 12 18 00
	95 L. L.	9 19 43	2 56 50	Eaw. 12 18 00·75
	97 U. L.	9 22 31·5	2 54 58·5	00 00·75
	97 L. L.	9 24 48·5	2 52 48	Clock. 12 17 00
	99 U. L.	9 26 30	2 50 50·5	201. 9 7 20·5
	99 L. L.	9 28 47	2 48 49	4 00 33·5
	101 U. L.	9 30 36·5	2 46 55	
	101 L. L.	9 32 48·5	2 44 45	

Month.	Double Altitudes of the Sun.	Times by the Clock. Forenoon.	Times by the Clock. Afternoon.	Remarks.
	°	h. ′ ″	h. ′ ″	Comparison of Chronometers.
March 10	95 U. L.	9 18 09	2 58 53·5	h. ′ ″
	97 U. L.	9 20 11	2 54 53	Clock. 12 18 09
	99 U. L.	9 20 14	2 50 50	Earn. 12 20 24
	103 U. L.	9 24 38	2 42 44	02 26
	105 L. L.	9 40 28·5	2 36 34	Clock. 12 19 09
	107 U. L.	9 42 19	2 34 45	391. 8 08 08·25
	107 L. L.	9 44 30	2 32 32·5	4 09 35·75
	109 U. L.	9 46 29	2 30 41	
	109 L. L.	9 48 32·5	2 28 30	
11	96 U. L.	9 19 19	2 56 19·5	Clock. 12 24 09
	96 L. L.	9 21 29·5	2 54 09	Earn. 12 27 06·25
	98 U. L.	9 22 21	2 52 17·5	03 06·25
	98 L. L.	9 23 32	2 50 07	Clock. 12 25 09
	100 U. L.	9 27 23	2 48 16	391. 8 15 09
	100 L. L.	9 29 33	2 46 05·5	4 09 03
	102 U. L.	9 31 24	2 44 15	
	102 L. L.	9 33 35	2 42 04	
12	97 U. L.	9 23 58	2 54 06	Clock. 12 11 09
	97 L. L.	9 23 08	2 51 58·5	Earn. 12 14 01·25
	99 U. L.	9 24 59	2 50 08	3 11·25
	99 L. L.	9 27 00·5	2 47 56·5	Clock. 12 12 09
	101 U. L.	9 29 00·5	2 45 06	391. 8 02 11
	101 L. L.	9 31 10·5	2 43 56·5	4 09 02
	103 U. L.	9 33 01	2 42 06	
	103 L. L.	9 35 12	2 39 55	
13	95 U. L.	9 16 33	2 58 00	Clock. 12 06 00
	95 L. L.	9 18 44	2 55 50	Earn. 12 09 39
	97 U. L.	9 20 35	2 53 50·5	03 39
	97 L. L.	9 22 45·5	2 51 48·5	Clock. 12 07 00
	99 U. L.	9 24 36	2 49 58·5	391. 8 36 51
	99 L. L.	9 26 46	2 47 48·5	4 10 06
	101 U. L.	9 28 36·5	2 45 58	
	101 L. L.	9 30 46·5	2 43 48	
14	95 U. L.	9 16 13	2 53 49·5	Clock. 12 22 00
	95 L. L.	9 18 22	2 55 40	Earn. 12 25 55·75
	97 U. L.	9 20 12·5	2 53 49	3 55·75
	97 L. L.	9 22 22·5	2 51 38·5	Clock. 12 23 00
	99 U. L.	9 24 13	2 49 49	391. 8 12 43
	99 L. L.	9 26 22	2 47 39	4 10 17
	101 U. L.	9 28 14	2 45 48	
	101 L. L.	9 30 24	2 43 38	

Month.	Double Altitudes of the Sun.	Times by the Clock. Forenoon.	Times by the Clock. Afternoon.	Remarks.
		h. ′ ″	h. ′ ″	*Comparison of Chronometers.*
March 16	98 U. L.	9 21 29·5	2 51 22·5	h. ′ ″
	98 L. L.	9 22 39	2 49 13·5	*Clock.* 12 24 00
	113 U. L.	9 51 34	2 21 19	*Earn.* 12 28 40·5
	113 L. L.	9 53 43	2 19 09·5	4 40·5
	118 U. L.	10 01 31	2 11 18	*Clock.* 12 25 00
	118 L. L.	10 03 43·5	2 09 08·5	*Sol.* 8 14 21
	100 U. L.	10 05 35	2 07 18	4 10 25
	100 L. L.	10 07 44	2 05 09·5	
17	95 U. L.	9 14 47	2 56 47·5	*Clock.* 12 02 00
	95 L. L.	9 16 55	2 54 38	*Earn.* 12 06 22·25
	97 U. L.	9 18 42	2 52 47·5	06 22·25
	97 L. L.	9 19 55	2 50 37·5	*Clock.* 12 02 00
	99 U. L.	9 22 47	2 48 47	*Sol.* 7 51 32·75
	99 L. L.	9 24 55·5	2 46 37·5	4 10 27·25
	101 U. L.	9 26 47	2 44 47	
	101 L. L.	9 28 56	2 42 37	
	103 U. L.	9 30 47	2 40 47	
	103 L. L.	9 32 56	2 38 37	
				Clock. 12 01 00
				Earn. 12 06 43
18	114 U. L.	9 52 36·5	2 18 39	05 43
	114 L. L.	9 54 36·5	2 16 29	*Clock.* 12 02 00
	116 U. L.	9 56 27	2 14 29	*Sol.* 7 51 21
				4 10 39
19	94 U. L.	9 12 56·5	2 58 14	*Clock.* 12 13 00
	94 L. L.	9 14 13	2 56 05	*Earn.* 12 19 09·25
	96 U. L.	9 16 04	2 54 14·5	6 09·25
	96 L. L.	9 18 13	2 52 05·5	*Clock.* 12 14 00
	98 U. L.	9 20 04	2 50 14	*Sol.* 8 03 08·25
	98 L. L.	9 22 13	2 48 05	4 10 51·75
	100 U. L.	9 24 04·5	2 46 14	
	100 L. L.	9 26 13	2 44 05	
20	94 U. L.	9 11 44	2 57 57·5	*Clock.* 12 00 00
	94 L. L.	9 13 53·5	2 55 49	*Earn.* 12 08 24·5
	96 U. L.	9 15 44	2 53 57	08 24·5
	96 L. L.	9 17 53	2 51 48	*Clock.* 12 03 00
	98 U. L.	9 19 44·5	2 49 57	*Sol.* 7 51 57·25
	98 L. L.	9 21 53·5	2 47 48	4 11 08·75
	100 U. L.	9 23 44·5	2 45 57	
	100 L. L.	9 25 53·5	2 43 48	

For the Time and Longitude;

Also for the Rates of the Chronometers,

before the Clock was fixed.

1827 Month.	Double Altitudes of the Sun.	Times by Chronometer 391. Forenoon.	Afternoon.	Comparison of the Chronometers with 391.	Remarks.
	°	h. ′ ″	h. ′ ″	h. ′ ″	
Dec. 24	98 U. L. ..	7 27 26	12 07 21·5	391. 9 47 24	
	98 L. L. ..	7 30 00·5	12 04 38	*Earn.* 11 23 13	
	100 U. L. ..	7 32 30	12 02 19	1 35 49	
	100 L. L. ..	7 35 14·5	11 59 33		
	102 U. L. ..	7 37 36	11 57 11		
	102 L. L. ..	7 40 23·5	11 54 23·5		
	104 U. L. ..	7 42 47	11 52 01		
	104 L. L. ..	7 45 38·5	11 49 00·5		
25	96 U. L. ..	7 22 20·5	12 12 29	391. 9 47 08	
	96 L. L. ..	7 25 11	12 09 47	*Earn.* 11 25 58	
	98 U. L. ..	7 27 29·5	12 07 29	1 36 53	
	98 L. L. ..	7 30 13	12 04 45·5		
	100 U. L. ..	7 32 31·5	12 02 27		
	100 L. L. ..	7 35 17	11 59 41		
	102 U. L. ..	7 37 38	11 57 21		
	102 L. L. ..	7 40 25·5	11 54 32·5		
26	98 U. L. ..	9 04 30	1 44 44·5	*Earn.* 11 24 27	
	98 L. L. ..	9 07 12·5	1 42 00	391. 9 47 28	
	100 U. L. ..	9 09 33	1 39 41·5	1 37 09	
	100 L. L. ..	9 12 18	1 36 54·5		
	102 U. L. ..	9 14 38·5	1 34 36		
	102 L. L. ..	9 17 27	1 31 48		
	104 U. L. ..	9 19 50	1 29 24·5		
	104 L. L. ..	9 22 40·5	1 26 33·5		
27	98 U. L. ..	9 05 09·5	1 45 35·5	*Earn.* 11 25 22	
	98 L. L. ..	9 07 54	1 42 50·5	391. 9 47 33	
	100 U. L. ..	9 10 13·5	1 40 32	1 37 49	
	100 L. L. ..	9 12 58·5	1 37 46·5		
	102 U. L. ..	9 15 19	1 35 06		
	102 L. L. ..	9 18 07·5	1 32 38·5		
	104 U. L. ..	9 20 30	1 30 16		
	104 L. L. ..	9 23 21	1 27 25		
28	102 U. L. ..	9 15 58·5	1 36 22	*Earn.* 11 26 29	
	102 L. L. ..	9 18 46·5	1 33 33·5	391. 9 47 32	
	104 L. L. ..	9 20 17·5	1 03 02·5	1 38 48	
	108 U. L. ..	9 31 44·5	1 20 36		
	108 L. L. ..	9 34 41	1 17 39·5		
	110 U. L. ..	9 37 19	1 15 00		

Month.	Double Altitudes of the Sun.	Times by Comm. Earnshaw. Forenoon.	Times by Comm. Earnshaw. Afternoon.	Comparison of the Chronometers with Earnshaw.	Remarks.
	°	h. ′ ″	h. ′ ″	h. ′ ″	
Dec. 31	98 U. L. ..	9 07 40·5	1 49 08	*Earn.* 11 28 28	
	98 L. L. ..	9 10 23	1 46 06	30 L. 9 48 13	
	100 U. L. ..	9 12 49	1 44 07	1 40 11	
	100 L. L. ..	9 15 26·5	1 41 23·5		
	102 U. L. ..	9 17 43·5	1 39 02		
	102 L. L. ..	9 20 33	1 36 17		
	104 U. L. ..	9 22 54	1 33 55		
	104 L. L. ..	9 25 44·5	1 31 06		
Jan. 1	99 U. L. ..	9 10 42	1 47 32	*Earn.* 11 29 06	
	99 L. L. ..	9 13 26	1 44 48·5	30 L. 9 48 32	
	101 U. L. ..	9 15 44	1 42 30	1 40 34	
	101 L. L. ..	9 18 30·5	1 39 45		
	103 U. L. ..	9 20 53	1 37 25		
	103 L. L. ..	9 23 38·5	1 34 36·5		
	105 U. L. ..	9 26 00	1 32 14		
	105 L. L. ..	9 28 50·5	1 29 23·5		
2	101 U. L. ..	9 16 13	1 43 25	*Earn.* 11 29 48	
	101 L. L. ..	9 18 58	1 40 39	30 L. 9 48 42	
	103 U. L. ..	9 21 18	1 38 19·5	1 40 06	
	103 L. L. ..	9 24 00	1 35 33		
	105 U. L. ..	9 26 28·5	1 33 09·5		
	105 L. L. ..	9 29 18·5	1 30 19·5		
	107 U. L. ..	9 31 43	1 27 55		
	107 L. L. ..	9 34 35·5	1 25 03		
4	98 U. L. ..	9 09 42	1 52 50·5	*Earn.* 11 31 14	
	98 L. L. ..	9 12 24	1 50 08	30 L. 9 49 07	
	100 U. L. ..	9 14 41·5	1 47 53	1 42 07	
	100 L. L. ..	9 17 25	1 45 06·5		
	102 U. L. ..	9 19 43	1 42 49		
	102 L. L. ..	9 22 28	1 40 03·5		
	104 U. L. ..	9 24 48	1 37 44		
	104 L. L. ..	9 27 37	1 34 53		
6	98 U. L. ..	9 10 40	1 54 48·5	*Earn.* 11 32 43	
	98 L. L. ..	9 13 21·5	1 52 07	30 L. 9 49 40	
	100 U. L. ..	9 15 37	1 49 50	1 43 03	
	100 L. L. ..	9 18 20·5	1 47 06·5		
	102 U. L. ..	9 20 38·5	1 44 50		
	102 L. L. ..	9 23 23·5	1 42 05		
	104 U. L. ..	9 25 42·5	1 39 46		
	104 L. L. ..	9 28 30·5	1 36 58		
9	97 U. L. ..	9 09 16·5	1 00 01·5	*Earn.* 11 34 38	
	97 L. L. ..	9 11 56·5	1 57 22	30 L. 9 50 19	
	99 U. L. ..	9 14 10·5	1 55 08	1 44 19	
	99 L. L. ..	9 16 51	1 52 28		
	101 U. L. ..	9 18 07·5	1 50 12		
	101 L. L. ..	9 21 49	1 47 30·5		
	103 U. L. ..	9 24 00	1 45 12		
	103 L. L. ..	9 26 50·5	1 42 28·5		

Month.	Double Altitudes of the Sun.	Time by Chron. Earnshaw. Forenoon.	Time by Chron. Earnshaw. Afternoon.	Comparison of the Chronometers with *Earnshaw*.	Remarks.
	°	h. ′ ″	h. ′ ″	h. ′ ″	
Jan. 10	96 U. L. ..	9 07 10	2 09 23	*Earn.* 11 35 15	
	96 L. L. ..	9 09 18	2 00 41	391. 9 50 28	
	98 U. L. ..	9 12 00	1 58 30·5	1 44 47	
	98 L. L. ..	9 14 47	1 55 52·5		
	100 U. L. ..	9 16 55	1 53 38·5		
	100 L. L. ..	9 19 30·5	1 53 55·5		
	102 U. L. ..	9 21 54	1 48 42		
	102 L. L. ..	9 24 35	1 45 59·5		
11	96 U. L. ..	9 07 28·5	2 06 19	*Earn.* 11 35 52	
	96 L. L. ..	9 10 03·5	2 01 41·5	391. 9 50 37	
	98 U. L. ..	9 12 10	1 59 29	1 45 15	
	98 L. L. ..	9 14 57	1 56 50·5		
	100 U. L. ..	9 17 11·5	1 54 37		
	100 L. L. ..	9 19 53	1 51 55		
	102 U. L. ..	9 22 07·5	1 49 40		
	102 L. L. ..	9 24 50	1 46 57		
12	95 U. L. ..	9 05 25	2 07 41	*Earn.* 11 36 59	
	95 L. L. ..	9 07 58	2 05 04·5	391. 9 50 47	
	97 U. L. ..	9 10 11	2 02 52·5	1 45 43	
	100 U. L. ..	9 17 28	2 55 36		
	100 L. L. ..	9 20 06·5	1 59 56		
	102 U. L. ..	9 22 23	1 50 41·5		
	102 L. L. ..	9 25 03	1 47 59·5		
	104 U. L. ..	9 27 19	1 45 45		
	104 L. L. ..	9 30 01	1 42 59		
13	96 U. L. ..	9 08 44·5	2 08 29·5	*Earn.* 11 38 51	
	96 L. L. ..	9 11 20	2 05 46·5	391. 9 51 15	
	98 U. L. ..	9 13 32	2 03 35	1 47 10	
	98 L. L. ..	9 16 08	2 00 58		
	100 U. L. ..	9 18 20·5	1 58 43·5		
	100 L. L. ..	9 20 59	1 56 07		
	102 U. L. ..	9 23 12	1 53 54·5		
	102 L. L. ..	9 25 52	1 51 15		
14	95 U. L. ..	9 06 54·5	2 11 37·5	*Earn.* 11 39 03	
	95 L. L. ..	9 09 47·5	2 09 03·5	391. 9 51 23	
	97 U. L. ..	9 11 18·5	2 06 52·5	1 47 38	
	97 L. L. ..	9 13 53	2 04 18·5		
	99 U. L. ..	9 16 24	2 02 07		
	99 L. L. ..	9 18 41	1 59 30·5		
	101 U. L. ..	9 20 54	1 57 17·5		
	101 L. L. ..	9 23 32	1 54 39		

Month.	Double Altitudes of the Sun.	Tissot Chron. Earnshaw. Forenoon.	Tissot Chron. Earnshaw. Afternoon.	Comparison of the Chronometers with Earnshaw.	Remarks.
	°	h. ′ ″	h. ′ ″	h. ′ ″	
Jan. 19	95 U. L. ..	9 07 10	2 14 31	*Earn.* 11 40 48	
	96 L. L. ..	9 09 43	2 11 58	391. 9 51 59	
	97 U. L. ..	9 11 51·5	2 09 49·5	1 48 49	
	97 L. L. ..	9 14 26	2 07 16·5		
	99 U. L. ..	9 16 35·5	2 05 06		
	99 L. L. ..	9 19 10	2 02 32		
	101 U. L. ..	9 21 21	2 03 30·5		
	101 L. L. ..	9 23 56·5	1 57 44		
20	98 U. L. ..	9 14 21·5	2 08 25	*Earn.* 11 41 21	
	98 L. L. ..	9 16 54	2 05 52·5	391. 9 52 06	
	100 U. L. ..	9 19 04·5	2 03 41	1 49 15	
	100 L. L. ..	9 21 30	2 01 07		
21	96 U. L. ..	9 09 46·5	2 14 01	*Earn.* 11 41 50	
	96 L. L. ..	9 12 19·5	2 11 31·5	391. 9 52 12	
	98 U. L. ..	9 14 27	2 09 23	1 49 43	
	98 L. L. ..	9 16 59·5	2 06 49·5		
	100 U. L. ..	9 19 09	2 04 39·5		
	100 L. L. ..	9 21 42·5	2 02 05		
	102 U. L. ..	9 23 54	1 59 55		
	102 L. L. ..	9 26 30	1 57 20		
22	96 U. L. ..	9 09 53·5	2 14 10	*Earn.* 11 42 24	
	96 L. L. ..	9 12 25	2 12 48	391. 9 52 13	
	98 U. L. ..	9 14 30·5	2 10 19·5	1 50 05	
	98 L. L. ..	9 17 05	2 07 47·5		
	100 U. L. ..	9 19 15	2 05 38·5		
	100 L. L. ..	9 21 48	2 03 04·5		
	102 U. L. ..	9 23 59·5	2 00 53		
	102 L. L. ..	9 26 33	1 58 20		
23	96 U. L. ..	9 09 59	2 15 54	*Earn.* 11 42 54	
	96 L. L. ..	9 12 30	2 13 22·5	391. 9 52 23	
	98 U. L. ..	9 14 38	2 11 15·5	1 49 31	
	98 L. L. ..	9 17 08·5	2 08 44		
	100 U. L. ..	9 19 17·5	2 06 34·5		
	100 L. L. ..	9 21 49·5	2 04 00·5		
	102 U. L. ..	9 23 59·5	2 01 54		
	102 L. L. ..	9 26 34	1 59 19		
24	96 U. L. ..	9 10 07	2 16 53·5	*Earn.* 11 43 28	
	96 L. L. ..	9 12 38·5	2 14 23	391. 9 52 23	
	98 U. L. ..	9 14 45	2 12 16	1 51 05	
	98 L. L. ..	9 17 16	2 09 45		
	100 U. L. ..	9 19 24·5	2 07 37		
	100 L. L. ..	9 21 56·5	2 05 05		
	102 U. L. ..	9 24 05·5	2 02 56·5		
	102 L. L. ..	9 26 38	2 00 24		

Month.	Double Abraham of the Pair.	Present Cubic Expansion.		Comparison of the Observations with Barrelay.	Remarks.
		Foreside.	Abreast.		
		h. ′ ″	h. ′ ″	h. ′ ″	
Jan. 97	97 U. L. ..	9 14 45	2 17 45·5	Exp. 11 45 10	
	97 L. L. ..	9 15 19·5	2 15 06·5	Obs. 9 58 19	
	98 U. L. ..	9 17 58	2 12 01	1 46 51	
	98 L. L. ..	9 19 32·5	2 10 28		
	100 U. L. ..	9 21 39·5	2 08 20·5		
	101 L. L. ..	9 24 39	2 05 21		
	102 U. L. ..	9 25 28	2 03 47		
	103 L. L. ..	9 29 11	2 01 14		
98	103 U. L. ..	9 29 47·5	2 11 40	Exp. 11 45 47	
	104 L. L. ..	9 34 24	2 07 03·5	Obs. 9 50 09	
	104 U. L. ..	9 36 59·5	2 08 25	1 55 38	
	106 L. L. ..	9 39 49	2 07 47		
	106 U. L. ..	9 40 58	2 10 50·5		
	108 L. L. ..	9 43 09·5	2 08 09·5		
	109 U. L. ..	9 43 45	2 13 44		
99	110 U. L. ..	9 10 47	2 09 49·5	Exp. 11 46 41	
	111 L. L. ..	9 13 19	2 09 34	Obs. 9 51 28	
	111 U. L. ..	9 15 18	2 18 30	1 55 03	
	113 L. L. ..	9 17 43	2 15 47·5		
	113 U. L. ..	9 19 50	2 13 37·5		
	115 L. L. ..	9 22 19	2 11 08·5		
	116 U. L. ..	9 24 24	2 09 04		
	117 L. L. ..	9 26 58	2 06 33		
25	96 U. L. ..	9 10 46	2 23 29·5	Exp. 11 47 03	
	96 L. L. ..	9 13 19	2 21 03·5	Obs. 9 52 29	
	98 U. L. ..	9 15 53	2 19 09	1 54 47	
	98 L. L. ..	9 17 43	2 16 33		
	100 U. L. ..	9 20 47	2 14 09·5		
	100 L. L. ..	9 22 18	2 12 03·5		
	101 U. L. ..	9 24 03	2 09 58		
	102 L. L. ..	9 26 48	2 07 29		
Feb. 5	98 U. L. ..	9 15 18·5	2 20 47·5	Exp. 11 47 10	
	98 L. L. ..	9 17 49	2 18 22	Obs. 9 52 18	
	100 U. L. ..	9 19 43·5	2 16 19	1 54 41	
	100 L. L. ..	9 22 11	2 13 53		
	102 U. L. ..	9 24 15	2 11 49		
	103 L. L. ..	9 26 49	2 09 09·5		
	104 U. L. ..	9 28 48·5	2 07 18		
	106 L. L. ..	9 31 25	2 04 49		
5	100 U. L. ..	9 19 49	2 17 14	Exp. 11 48 31	
	100 L. L. ..	9 22 09·5	2 14 49·5	Obs. 9 54 11	
	102 U. L. ..	9 24 09·5	2 12 49	1 54 19	
	103 L. L. ..	9 26 26·5	2 10 17		
	104 U. L. ..	9 28 40·5	2 08 19		
	106 L. L. ..	9 31 07	2 05 43·5		

Month.	Double Altitudes of the Sun.	Tangent Crack. Earnshaw. Forenoon.	Tangent Crack. Earnshaw. Afternoon.	Comparison of the Chronometers with Earnshaw.	Remarks.
	°	h. ′ ″	h. ′ ″	h. ′ ″	
Feb. 5	95 U. L. ..	9 10 43	2 27 48	*Earn.* 11 49 18	
	96 L. L. ..	9 12 09	2 25 22	391. 9 53 8	
	96 U. L. ..	9 15 00·5	2 23 22	1 57 7	
	98 L. L. ..	9 17 34·5	2 20 58		
	100 U. L. ..	9 19 36	2 18 55·5		
	100 L. L. ..	9 21 59·5	2 16 31·5		
	102 U. L. ..	9 24 02·5	2 14 28·5		
	102 L. L. ..	9 26 28	2 12 04		
7	104 U. L. ..	9 28 07	2 11 48·5	*Earn.* 11 50 03	
	104 L. L. ..	9 30 51	2 09 23	391. 9 54 53	
	105 U. L. ..	9 32 33·5	2 07 43	1 58 13	
	106 L. L. ..	9 35 19·5	2 04 56		
	108 U. L. ..	9 37 23·5	2 02 52		
	108 L. L. ..	9 39 49	2 00 26·5		
8	95 U. L. ..	9 08 36·5	2 38 26	*Earn.* 11 50 04	
	95 L. L. ..	9 10 57·5	2 35 03·5	391. 9 51 49	
	97 U. L. ..	9 12 57	2 28 03	1 59 39	
	97 L. L. ..	9 15 19	2 25 42·5		
	99 U. L. ..	9 17 28·5	2 23 13		
	99 L. L. ..	9 19 41·5	2 21 21		
	101 U. L. ..	9 21 42	2 19 20		
	101 L. L. ..	9 24 05·5	2 16 55·5		
9	95 U. L. ..	9 08 25·5	2 33 07·5	*Earn.* 11 50 44	
	95 L. L. ..	9 10 50	2 30 47	391. 9 51 45	
	97 U. L. ..	9 12 40·5	2 28 48	1 59 06	
	97 L. L. ..	9 15 11	2 26 28		
	99 U. L. ..	9 17 11	2 24 28		
	99 L. L. ..	9 19 33	2 22 00·5		
	101 U. L. ..	9 21 33	2 20 05·5		
	101 L. L. ..	9 23 55·5	2 17 42·5		
10	96 U. L. ..	9 10 35·5	2 34 41·5	*Earn.* 11 51 00	
	96 L. L. ..	9 12 55	2 29 21	391. 9 51 32	
	98 U. L. ..	9 14 54·5	2 27 41·5	1 59 34	
	98 L. L. ..	9 17 17	2 25 01		
	100 U. L. ..	9 19 16	2 23 00·5		
	100 L. L. ..	9 21 36·5	2 20 40·5		
	102 U. L. ..	9 23 37	2 18 41		
	102 L. L. ..	9 25 59	2 16 19		
11	96 U. L. ..	9 10 20·5	2 32 18	*Earn.* 11 51 09	
	96 L. L. ..	9 12 45	2 29 59·5	391. 9 51 18	
	98 U. L. ..	9 14 44	2 28 00	1 59 02	
	98 L. L. ..	9 17 04	2 25 40·5		
	100 U. L. ..	9 19 03·5	2 23 41		
	100 L. L. ..	9 21 25	2 21 00		
	102 U. L. ..	9 23 24	2 19 21		
	102 L. L. ..	9 25 43	2 17 00		

Month.	Double Altitudes of the Sun.	Times by Chron. Earnshaw. Forenoon.	Afternoon.	Comparison of the Chronometers with Earnshaw.	Remarks.
		h. ′ ″	h. ′ ″	h. ′ ″	
Feb. 19	96 U. L. ..	9 10 17	2 32 58	*Earn.* 11 51 55	
	96 L. L. ..	9 12 30	2 30 38·5	391. 9 51 06	
	98 U. L. ..	9 14 35	2 28 40	2 00 49	
	98 L. L. ..	9 16 54·5	2 26 27		
	100 U. L. ..	9 18 53	2 24 27		
	100 L. L. ..	9 21 13	2 22 01·5		
	102 U. L. ..	9 23 19·5	2 20 03·5		
	102 L. L. ..	9 25 33	2 17 43		
20	96 U. L. ..	9 19 05	2 33 33·5	*Earn.* 11 51 47	
	96 L. L. ..	9 17 25	2 31 13·5	391. 9 50 44	
	98 U. L. ..	9 14 23	2 29 10	2 00 53	
	98 L. L. ..	9 16 42·5	2 26 50·5		
	100 U. L. ..	9 18 40·5	2 24 57·5		
	100 L. L. ..	9 21 03	2 22 30		
	102 U. L. ..	9 22 30	2 20 40·5		
	102 L. L. ..	9 25 29·5	2 18 22		

The Chronometers compared with the Clock which was now fixed, (vide page 157 to 161.)

	Clock taken down.	Times by Earnshaw.		with Earnshaw.	
March 21	98 U. L. ..	9 26 03·5	2 36 23·5	*Earn.* 12 11 14	
	98 L. L. ..	9 28 14·5	2 34 13·5	391. 7 53 16	
	100 U. L. ..	9 30 05·5	2 32 22	4 17 58	
	100 L. L. ..	9 32 15	2 30 14		
	102 U. L. ..	9 34 05·5	2 48 23		
	102 L. L. ..	9 36 15	2 46 14		
	104 U. L. ..	9 38 05·5	2 44 23		
	104 L. L. ..	9 40 15	2 42 14		
22	98 U. L. ..	9 26 04	2 36 19	*Earn.* 12 11 12	
	98 L. L. ..	9 28 13	2 34 09·5	391. 7 52 43	
	100 U. L. ..	9 30 03·5	2 32 19	4 18 08	
	100 L. L. ..	9 32 13	2 30 09		
	102 U. L. ..	9 34 22	2 48 19·5		
	102 L. L. ..	9 36 12·5	2 46 10·5		
	104 U. L. ..	9 38 03·5	2 44 19		
	104 L. L. ..	9 40 13	2 42 10		

For the Bearing of Mount Ophir

and the Variation of the Compass.

1822 Month.	Times by Chronometer 391.	Angle between the Sun's nearest Limb and Mount Ophir.	Error of Seamed.	Remarks.
	h. ′ ″	° ′ ″	—	
Dec. 21	3 52 45	25 45 35	0·40	
1823	*Earnshaw.*			
Jan. 10	5 53 08	24 43 37	0·50	
30	5 47 47	20 14 30	1·02	

Station at Pulo Gaunsah Lout.

between	and	Angles. °	′	″
Pulo Pianee	Pulo Oolur	97	09	31
	Pulo Gaunsah	59	02	00
	Nellang Hill	90	25	00
	Oojong Tuan	101	47	00
	Lalewaun Loolee	107	12	00
	Toolooehemanah	115	09	00
	Pungalaurea	120	50	30
	Kurbuyee Hill	132	10	30
	Mount Ophir	145	07	31
	Peak N. E. of Ayer Bonghy	136	10	00
	8d Peak on the Range	102	10	00
	Tekoo Mamang Hill	104	00	31

The *End* of the Observations made by the Assistant, *Mr. P. Lawrence.*

AT BENCOOLEN.

Observations by Mr. John Robinson.

For the LATITUDE.

1793 Month.	Names.	Double Meridian Altitudes	Errors of Sextant.	Heights of the Thermt.	Heights of the Barom.	Remarks.
		° ′ ″	′ ″	°	Inches.	
May 2	☉ Upper Maj. . .	57 43 15	0 30,0	88	29,91	
	α Crucis . . .	62 24 45	0 30,0	88	29,91	
	β Crucis . . .	70 18 45	0 30,0	88	29,91	
	δ Centauri . .	68 37 15	0 30,0	88	29,91	
3	ε Centauri . .	68 03 15	1 1,0	86½	29,94	
5	Sun's L. L. . .	120 25 00	1 1,0	87½	29,97	
6	Sun's L. L. . .	109 31 15	1 1,0	90	29,99	
7	α Crucis . . .	73 04 45	1 1	81,5	29,94	
8	Sun's L. L. . .	109 10 00	1 1	91,5	29,91	
9	☉ Upper Maj. . .	63 7 00	1 1	80	29,94	
	β Crucis . . .	70 13 30	1 1	84	29,93	
June 4	Sun's L. L. . .	107 30 0	1 1	80	29,91	
5	Sun's L. L. . .	102 36 15	1 1	80	29,89	

For the TIME, LONGITUDE, *and* RATES *of* CHRONOMETERS.

Month.	Double Altitudes of the Sun.	Times by Chronometer No. 291.	Error of Seconds.	Comparison of the Chronometers with No. 293.		Remarks.
	°	h. ′ ″	′ ″	No. 293. h. ′ ″	Error h. ′ ″	
April 29	☉ 29 10 U. L. .	3 21 05	1 49	0 20 0	0 34 0	These Observations were taken on board the Ship Duke of Buccleuch, from Madras to Bencoolen, on the E. coast of Sumatra, in the Service of the E. I. Company.
	☉ 29 03 U. L. .	23 29		13 5 [illegible]	19 [illegible]	
				0 5 [illegible]	0 12 [illegible]	
30	☉ 30 26 U. L. .	18 23 18	0 37,5	19 [illegible] 0	19 [illegible] 0	
	☉ 30 29 L. L. .	23 23		19 [illegible] 35	19 41 [illegible]	
				0 [illegible] 35	0 [illegible]	
May 30	☉ 29 00 L. L. .	19 34 22	0 36,5	18 10 0	17 [illegible] 0	
	1 30 L. L. .	35 39		18 39 [illegible]	18 [illegible]	
	29 15 L. L. .	37 37,5		0 29 [illegible]	0 19 [illegible]	
May 6	☉ 28 45 L. L. .	17 28 41	0 [illegible]	18 28 0	18 [illegible]	
	☉ 28 55 L. L. .	18 [illegible]		18 [illegible]	18 [illegible]	
	☉ 28 15 L. L. .	29 1 22		0 [illegible]	0 [illegible]	
6	☉ 28 30 L. L. .	18 44 29	1 1,0	19 [illegible] 0	18 [illegible]	
	☉ 28 15 L. L. .	56 [illegible]		18 [illegible]	18 [illegible]	
	☉ 28 15 L. L. .	57 18		0 [illegible]	0 [illegible]	
7	☉ 28 15 L. L. .	18 7 55	1 1,0	18 32 0	18 [illegible]	
	☉ 28 15 L. L. .	9 49		18 [illegible]	18 [illegible]	
	☉ 28 15 L. L. .	11 03		0 [illegible]	0 [illegible]	
8	☉ 28 00 L. L. .	18 57 58	1 1,0	18 [illegible] 0	18 [illegible] 0	
	☉ 28 30 L. L. .	59 10		18 [illegible]	18 [illegible]	
	☉ 28 00 L. L. .	59 51		0 [illegible]	0 [illegible]	

Month.	Double Altitudes of the Sun.	Time by Chron. 291. Forenoon.	Time by Chron. 291. Afternoon.	Comparison of the Chronometers with No. 291. No. 297.	Comparison of the Chronometers with No. 291. Error.	Remarks.
		h. ′ ″	h. ′ ″	h. ′ ″	h. ′ ″	
May 13	104 00 U. L.	8 9 10	18 43 13	10 3 30	10 6 05	
	104 00 L. L.	11 51	46 38	38 19 41	38 29 17	
	106 00 U. L.	14 15	48 12,5	33 14 11	33 32 15	
	106 00 L. L.	16 53	51 26			
	108 00 U. L.	19 16,5	53 13,5			
	108 00 L. L.	21 54	55 51,5			
14	110 00 U. L.	7 00 32,5	38 58	58 24 30	10 26 00	
	110 00 L. L.	8 3 37,5	39 45	59 43 46	10 43 16	
	108 00 U. L.	4 43	37 33	59 14 16	00 17 14	
	108 00 L. L.	7 21	34 50			
	106 00 U. L.	9 40	33 35			
	106 00 L. L.	12 22	30 55			
	104 00 U. L.	14 45,5	27 29,5			
	104 00 L. L.	17 20,5	24 50,5			
	102 00 U. L.	19 42	22 19,5			
	102 00 L. L.	22 20	19 38			
	100 00 U. L.	0 53 7,5	17 7,5			
	100 00 L. L.	3 27 38,5	14 33,5			
15	98 00 L. L.	8 7 55	18 34 7	10 27 20	10 26 08	
	98 00 U. L.	10 39	21 01	10 41 34	10 41 21	
	96 00 L. L.	13 18	23 5	10 18 26	00 15 14	
	96 00 U. L.	15 38	25 43,5			
	94 00 L. L.	18 18	28 2,5			
	94 00 U. L.	20 40	30 39,5			
	92 00 L. L.	23 15	33 14			
	92 00 U. L.	25 38,5	35 43,5			
	90 00 L. L.	28 20	38 29			

1862 March	Double Altitudes of the Sun.	Transit by Chronometer No. 291.	Error of Sextant.	Comparison of the Chronometers with 291. No. 297.	Error.	Remarks.
		h. ′ ″	′ ″		h. ′ ″	
April 11	116 00 00 U. L.	17 18 8			10 00 00	These Observations taken on my arrival at Bourgainville, from Gunnock Land—the Station at Child Schoonaff's Garden, 200 yards S. S. E. of Fort Marlboro'.
	116 00 00 L. L.	20 29			3 40 35	
					3 39 7	
	118 00 00 U. L.	23 26	+0·29			
	118 00 00 L. L.	26 28				
	120 00 00 U. L.	27 4				
	120 00 00 L. L.	29 35				
12	118 00 00 U. L.	17 24 4			10 00 00	
	118 00 00 L. L.	20 24,5			3 40 35	
					3 40 31	
	120 00 00 U. L.	23 21	0·00			
	120 00 00 L. L.	26 22				
	122 00 00 U. L.	27 00				
	122 00 00 L. L.	29 31				

Month.	Double Altitudes of the Sun.	Time by Chronometer Equation.	Error of Sextant.	Comparison of the Chronometers with *Greenwich*.		Remarks.
	° ′ ″	h. ′ ″	″	No. 287.	No. 281. h. ′ ″	
April 29	113 00 00 U. L.	20 49 58	+0 9,5		8 57 09	These Observations were taken at a Station in Capt. Wilson's Garden, about 400 yards South-East of Madras.
	115 00 00 U. L.	50 09			8 58 36	
	116 00 00 U. L.	51 07,5			8 59 4	
30	115 00 00 U. L.	20 52 17	0 8,5		8 58 00	
	115 30 00 U. L.	54 03			8 59 27	
					8 58 32	
May 1	108 00 00 U. L.	20 57 19	0 8,5		8 43 19	
	109 30 00 U. L.	59 08			8 7 32	
	109 00 00 U. L.	58 35			8 6 5	
2	103 00 00 U. L.	21 7 03	0 9,5		14 43 00	
	105 30 00 U. L.	9 4,5			7 11 58	
	121 00 00 U. L.	10 05			8 23 28	
3	100 30 00 U. L.	20 51 45	0 8,5		13 43 00	
	101 00 00 U. L.	52 34			7 10 47,5	
	100 30 00 U. L.	53 0			7 10 [illegible]	
4	170 27 30 U. L.	21 11 22	0 8,5		19 03 03	
	171 0 00 U. L.	14 41			7 10 09	
	171 31 00 U. L.	15 27,5			7 14 01	
5	88 13 15 U. L.	19 55 27,5	0 8,0		19 46 00	
	88 42 15 L. L.	57 03			7 10 24	
					8 09 6	
6	88 43 30 U. L.	19 55 15	0 8,0		19 46 00	
	88 01 30 L. L.	57 27			7 10 35	
					8 05 35	
7	86 06 45 U. L.	20 14 13	−0 8,1		19 45 00	
	85 23 15 L. L.	53 20,5			7 11 59	
					8 09 1	
8	86 3 45 U. L.	20 14 19	0 8,1		19 47 09	
	86 3 45 L. L.	19 43			7 10 32	
					8 26 49	
9	85 31 3 U. L.	20 14 21	+0 8,1		19 49 00	
	85 31 3 L. L.	17 00			7 11 3	
					8 26 55	
10	85 33 45 U. L.	20 15 45	0 8,1		19 49 00	
	85 33 45 L. L.	13 53,5			7 11 3	
					8 29 55	

For the Reasons of the Observations, see page 179.

1819 Month.	Time by Chronometer No. 281.	Bearing of the Sun by Theodolite.	Remarks.
May 10	h. ′ ″ 5 0 30	° ′ ″ S. 77 0 E. } Right Limb.	At Sea.
	5 30	S. 77 0 E. }	

At Ray Island.

Observations for the Latitude.

Month.	Names.	Double Meridian Altitude.	Error of Sextant.	Height of the Thrm.	Height of the Barom.	Remarks.
		° ′ ″	° ′ ″	°	Inches.	
May 16	♃ Crucis . . .	70 20 45	1 1,25	80	29,80	Place of Observation near the Wharf at the North End of the Island.
	♃ Ursæ Maj. . .	71 50 00	1 1,25	80	29,80	
	♃ Centauri . . .	68 45 00	1 1,25	80	29,83	

For the Time and Longitude of

Ray Island.

Month.	Double Altitude of the Sun.	Times by Chron. No. 291. Forenoon.	Times by Chron. No. 291. Afternoon.	Comparison of the Chronometers with No. 291.	Remarks.
	°	h. ′ ″	h. ′ ″	h. ′ ″	
May 16	100 U. L. . .	8 13 51	12 15 37	291. 11 28 00	Place of Observation as above.
	100 L. L. . .	8 16 33	12 15 50	297. 11 27 11,5	
				0 0 11,5	
				291. 11 30 00	
				Earn. 11 41 35	
				0 11 35	

For the Variation of the Compass

at Ray Island.

1877 Month.	Time by Chronometer No. 291.	Bearing of the Sun by the Theodolite.	Remarks.
	h. ′ ″	°	
May 17	4 28 30	N. 88° = Right Limb.	Sunrise.

Observations at Palo Pantono.

For the Latitude.

Month.	Names.	Double Meridian Altitude.	Error of Sextant.	Height of the Thrm.	Height of the Barom.	Remarks.
		h. ′ ″	° ′ ″	°	Inches.	
Sept. 2	♃ Lyræ . . .	102 9 20	0 45	79,9	29,80	These Observations were taken at a Station about 125 yards S. E. of Mr. Palmer's Bungalow.
3	♃ Lyræ . . .	102 11 30	1. 7,5	79,8	29,81	
	Fomalhaut . .	116 38 5	1. 7,5	79,8	29,85	
11	♃ Lyræ . . .	102 10 45	1. 7,5	85,4	29,94	
12	♃ Lyræ . . .	102 10 45	1. 7,5	81,5	29,99	
	♃ Perseus . . .	92 8 45	1. 7,9	81,5	29,99	
	♃ Cygni . . .	94 9 00	1. 7,8	81	29,99	
	Fomalhaut . .	118 34 00	1. 7,8	81	29,92	
17	♃ Perseus . . .	65 6 30	1. 15	82	29,93	
	♃ Cygni . . .	91 8 30	1. 15	83	29,93	

For the Time, Longitude, and Rates of Chronometers.

Month.	Double Altitudes of the Sun.	Times by Chronometer No. 297.	Error of Sextant.	Comparison of the Chronometers.		Remarks.
	° ′	h. ′ ″	′ ″		h. ′ ″	
Nov. 1	38 00 U. L. . .	19 37 1				These Observations were taken within a few yards of Mr. Prince's Bungalow.
	90 00 U. L. . .	41 17		No. 297.	10 51 00	
	92 00 U. L. . .	45 34		No. 291.	9 57 7	
	98 00 L. L. . .	19 39 19	1 12,5		00 53 53	
	90 00 L. L. . .	43 35,5		No. 297.	10 52 03	
	92 00 L. L. . .	47 53		*Earnshaw.*	11 12 14,5	
					00 20 14,5	

1822 Month.	Double Altitudes of the Sun.	Times by Chron. 297. Forenoon.	Times by Chron. 297. Afternoon.	Comparison of the Chronometers with No. 291.		Remarks.
	°	h. ′ ″	h. ′ ″		h. ′ ″	
Nov. 3	122 00 U. L. . .	8 52 54,75	12 36 00,5	No. 297.	10 54 00	
	122 00 L. L. . .	55 25	13 29,25	No. 291.	9 56 57	
	124 00 U. L. . .	57 41	11 16,5		00 58 3	
	124 00 L. L. . .	9 00 18,5	8 44	No. 297.	10 56 03	
	126 00 U. L. . .	2 27	6 29,5	*Earnshaw.*	11 18 25,75	
	126 00 L. L. . .	3 7,75	3 50,5		00 20 25,75	
6	116 00 U. L. . .	8 40 57	12 28 8,5	No. 297.	10 54 00	
	116 00 L. L. . .	43 29,75	25 25,75	No. 291.	9 56 24	
	118 00 U. L. . .	45 40	23 47,75		00 58 36	
	118 00 L. L. . .	48 13,25	20 55,25	No. 297.	10 54 00	
	120 00 U. L. . .	50 22,75	18 42,5	*Earnshaw.*	11 12 54,75	
	120 00 L. L. . .	52 59,25	16 9		00 20 54,75	
				No. 297.	10 54 00	
				No. 291.	9 56 35	
10	118 00 U. L. . .	8 50 29	12 10 49		00 58 9	
	120 00 U. L. . .	8 53 1	17 2,75	No. 297.	10 52 00	
				Earnshaw.	11 13 58,5	
					00 21 58,5	
				No. 297.	10 50 06	
				No. 291.	9 55 43	
12	122 00 U. L. . .	9 1 29	12 6 29		00 56 17	
	124 00 U. L. . .	4 7	9 7	No. 297.	10 52 00	
				Earnshaw.	11 13 14	
					00 20 14	

For the Time and Longitude of Nattal.

Month.	Double Altitudes of the Sun.	Times by Chron. No. 297. Forenoon.	Times by Chron. No. 297. Afternoon.	Comparison of the Chronometers with 297. No. 291.	Comparison of the Chronometers with 297. *Earnshaw.*	Remarks.
	°	h. ′ ″	h. ′ ″	h. ′ ″	h. ′ ″	
Dec. 2	50 00 U. L. . .	7 58 22	12 32 4	10 53 00	10 58 00	Station Captain Crisp's Bungalow at about 200 yards N. of the Fort Flag Staff.
	50 00 L. L. . .	58 53	29 24	25 2 32	11 20 7	
				1 20 9	00 20 7	
2	128 00	10 46 29	Error of Sextant	11 12 09	11 12 00	
				10 11 42	11 10 18	
		50 14	= 15	1 10 18	00 20 18	

1892 Month.	Double Altitudes of the Sun.	Times by Chronometer Earnshaw.	Error of Scatter.	Comparison of the Chronometer with Earnshaw.		Remarks.
				No. 397.	No. 391.	
	° ′ ″	h. ′ ″	′ ″		h. ′ ″	
March 27	123 00 L. L. . .	2 2 55	+0·0,02		6 38 50	Observations taken at Natal, on returning from Gaunaah Lent.
	123 00 U. L. . .	5 5			9 18 00	
	121 00 L. L. . .	6 55,5			4 20 50	
	121 00 U. L. . .	9 5,5				
	119 00 L. L. . .	10 55,75				
	119 00 U. L. . .	13 6				
	117 00 L. L. . .	14 56,75				
	117 00 U. L. . .	17 5,75				
28	123 00 L. L. . .	2 2 51,75	0·0,02		6 31 41,75	
	123 00 U. L. . .	5 1			2 10 00	
	121 00 L. L. . .	6 59			4 21 41,75	
	121 00 U. L. . .	9 2,25				
	119 00 L. L. . .	10 53,25				
	119 00 U. L. . .	13 5				
	117 00 L. L. . .	14 55				
	117 00 U. L. . .	17 5				
28	102 00 U. L. . .	21 33 18	1·00		6 43 31	
	102 00 L. L. . .	35 28			9 12 00	
	104 00 U. L. . .	37 17			4 31 31	
	104 00 L. L. . .	39 28				
	106 00 U. L. . .	41 17				
	106 00 L. L. . .	43 19				

For the Time and Longitude of the S. E. Point of Pulo Pinnee.

1892 Month.	Double Altitudes of the Sun.	Times by Chronometer No. 397.	Error of Scatter.	Comparison of the Chronometers with 397.	Remarks.
	° ′ ″	h. ′ ″	′ ″	h. ′ ″	
Dec. 9	101 00 U. L. . .	12 56 27		No. 397. 10 51 00	
	101 00 L. L. . .	12 59 11		No. 391. 9 49 26	
	99 00 U. L. . .	1 1 27	0·45,5	1 1 34	
	99 00 L. L. . .	1 4 11		No. 397. 10 18 00	
				Earn. 11 19 26	
				00 27 26	
	87 00 U. L. } Tamarind.	7 17 45			
	87 00 L. L. } Tamarind.	8 00 22			
	89 00 U. L. } Tamarind.	8 9 29		No. 397. 10 58 05	
	89 00 L. L. } Tamarind.	8 5 8		No. 391. 9 56 18	
	91 00 U. L. } Tamarind.	8 7 31		1 1 43	
	91 00 L. L. } Tamarind.	8 9 50			
10	87 00 L. L. } Afternoon.	1 55 41	0·45,5	No. 397. 10 59 00	
	87 00 U. L. } Afternoon.	1 30 50		*Earn.* 11 26 20	
	89 00 L. L. } Afternoon.	1 28 45		00 27 20	
	89 00 U. L. } Afternoon.	1 18 22			
	91 00 L. L. } Afternoon.	1 14 00			
	91 00 U. L. } Afternoon.	1 11 22			

1907 Month.	Double Altitudes of the Sun.	Times by Chronometer No. 197.	Error of Sextant.	Comparison of the Chronometers with 197.	Remarks.
	°	h. ′ ″	′ ″		
Dec. 10	67 00 U.L. . .	13 38 27	0-43.5		
	67 00 L.L. . .	59 1 1			
		Lunches.			
11	68 00 U.L. . .	20 15 18	0-43		
	68 00 L.L. . .	17 11			
12	69 00 L.L. . .	2 10 31			
	69 00 U.L. . .	19 18			
	78 00 L.L. . .	21 09	0-43		
	78 00 U.L. . .	24 02			
	78 00 L.L. . .	35 8			
	78 00 U.L. . .	38 29			
14	65 00 L.L. . .	1 41 35			
	65 00 U.L. . .	44 19	0-41.8		
	65 00 L.L. . .	40 25			
	65 00 U.L. . .	49 2			
	71 00 L.L. . .	51 17			
	71 00 U.L. . .	53 13			
16	69 00 U.L. . .	20 24 30			
	69 00 L.L. . .	27 13			
	91 00 U.L. . .	29 24	0-41		
	91 00 L.L. . .	42 9			
18	67 00 U.L. . .	20 17 17	1-8		
	67 00 L.L. . .	18 18			
17	66 00 U.L. . .	20 10 22			
	66 00 L.L. . .	18 19	1-9		
20	69 00 U.L. . .	21 3 45	1-3		
	79 00 L.L. . .	6 21			

AT

PULO GAUNSAH LOUT.

103,78 *Seconds*

North of the Equator.

EXPERIMENTS for ascertaining the LAWS of the PENDULUM.

1823. 15th February s. s.

Hygrom. { Beginning 61 moist. / End 61 moist. } Barom. { Beginning 30,158 / End 30,162 }

Temperature.	Disc. Hid. h. ' "	Reappeared. h. ' "	Arc of Transit.
69,3	7 19 36	7 19 49	1,43
69,2	7 31 39	7 31 57	1,373
69,6	7 43 48	7 43 1	1,878
69	7 54 53	7 54 29	1,554
69,9	8 6 2	8 6 10	1,073

Hygrom. { Begin 61 moist. / End 61 moist. } Barom. { Begin 30,169 / End 30,169 }

69,3	8 21 29	9 21 39	1,373
69,7	8 33 53	8 33 7	1,375
69,8	8 44 58	8 44 43	1,375
81	8 56 8	8 56 51	1,3
81,8	8 7 53	9 8 1	1,075

Hygrom. { Begin 93½ deg. / End 93 deg. } Barom. { Begin 30,002 / End 30,186 }

90,8	19 7 55,3	19 7 52	1,3
91,2	19 19 46	19 19 49	1,3
91,4	19 30 9	19 30 18	1,1
92,3	19 41 59	19 41 55	1,05
94	19 53 45	19 53 49	0,975

Hygrom. { Begin 89½ deg. / End 91 deg. } Barom. { Begin 30,038 / End 30,119 }

91,3	9 11 58	9 11 53	1,253
94	9 23 58	9 23 58	1,253
94	9 35 58,3	9 36 11	1,15
93,6	9 45 10	9 45 19	1,075
93,3	9 56 57	9 56 54	1,79

1824. February s. s.

Hygrom. { Begin 2 deg. / End 9 deg. } Barom. { Begin 30,183 / End 30,272 }

75,7	6 48 52,5	6 48 47	1,205
81	6 59 49	7 00 01	1,205
81,2	7 11 54,5	7 11 51	1,05
81,8	7 23 1	7 23 21	1,208
81,8	7 34 39,5	7 34 57[illegible]	1,08

1826. February s. s.

Hygrom. { Beginning 31 deg. / End 7 deg. } Barom. { Beginning 30,187 / End 30,198 }

Temperature.	Disc. Hid. h. ' "	Reappeared. h. ' "	Arc of Transit.
83,8	8 42 [illegible],5	9 42 [illegible]	1,075
83,3	8 53 40	8 54 22	1,975
83,7	9 5 13	9 5 55	1,175
83,8	9 17 47	9 18 0	1,3
83,7	9 29 23	9 29 28	1,075

Hygrom. { Begin 71 deg. / End 81 deg. } Barom. { Begin 30,193 / End 30,195 }

83,7	9 26 36	9 26 46	1,3
83,8	9 38 [illegible],5	9 [illegible] 21	1,375
83,7	10 1 48,5	10 2 [illegible]	1,375
83,7	10 13 15	10 13 30	1,195
83,8	10 24 48,3	10 25 3	1,075

Hygrom. { Begin 80½ deg. / End 89½ deg. } Barom. { Begin 30,176 / End 30,178 }

93,8	11 59 [illegible]	11 [illegible] 19	1,3
97,4	12 10 [illegible]	12 10 24	1,225
96	12 21 58	12 22 15	1,05
95	12 33 38	12 33 24	0,975
95,8	12 44 56	12 45 09	0,975

Hygrom. { Begin 87 deg. / End 87½ deg. } Barom. { Begin 30,145 / End 30,199 }

86,8	9 39 46	9 39 26	1,5
86,7	9 51 26	9 51 49	1,4
86,8	10 02 51	10 03 3	1,3
86,7	10 14 16	10 14 18	1,105
85,8	10 25 17,5	10 25 33	1,125

1826. February s. s.

Hygrom. { Begin 51 deg. / End 61 deg. } Barom. { Begin 30,150 / End 30,167 }

80	7 36 8	7 36 19	1,075
81,2	7 47 47	7 47 57	1,3
81,8	7 59 00	7 59 09	1,4
81,3	8 09 58	8 10 07	1,075
81,3	8 19 56,5	8 19 55	0,95

1736 *February* 2, N. S.

Thermom.	Beginning	61 deg.	Barom.	Beginning	Parisian 30,105
	End	81 deg.		End	30,174

Temperature.	Disc. High.			Disc. Evaporated.			Arc of Vibration.
°	h.	′	″	h.	′	″	
81,8	9	58	47,5	9	56	9	1,495
82	9	7	59,5	9	7	56	1,395
82,4	9	19	56	9	18	31	1,3
82,5	9	30	54,5	9	30	49	1,31
82,5	9	52	60,5	9	49	52½	1,01

Hygrom. Begin 19 deg. End 30½ deg. Barom. Begin 30,150 End 30,152

83,8	11	52	51	11	50	47	1,4
80	12	8	43	12	8	2	1,3
82,6	12	26	13,5	12	26	27	1,9
82	12	57	59	12	57	51	1,125
82,6	13	29	59,5	13	29	51	1,01

Hygrom. Begin 41½ deg. End 41½ deg. Barom. Begin 30,108 End 30,108

80,5	2	13	45,5	2	13	28	1,260
82,5	2	27	10,5	2	27	33	1,28
83,5	2	28	59,5	2	28	49	1,2
82	2	50	4,5	2	50	19	1,125
82,2	3	8	26,5	3	7	50	1,01

Hygrom. Begin 57½ deg. End 53½ deg. Barom. Begin 30,102 End 30,102

83,5	4	12	1	4	11	19	1,15
83,8	4	24	30,5	4	24	49	1,25
83,8	4	38	8,5	4	38	30½	1,01
83,8	4	47	42,5	4	48	7	1,125
83,2	4	59	59,5	4	59	41	1,052

1736 *February* 2, N. S.

Thermom.	Beginning	71 deg.	Barom.	Beginning	Parisian 30,185
	End	84 deg.		End	30,150

Temperature.	Disc. High.			Disc. Evaporated.			Arc of Vibration.
°	h.	′	″	h.	′	″	
81	8	47	17,5	8	47	28	1,475
81	8	58	50,5	8	59	8½	1,393
81	9	10	59,75	9	10	45	1,26
81,8	9	28	8,25	9	27	51½	1,175
81,8	9	53	46,05	9	54	2	1,1

Hygrom. Begin 41½ deg. End 38½ deg. Barom. Begin 30,151 End 30,150

83	14	43	5,5	14	43	32½	1,375
83,8	14	57	31,5	14	57	8½	1,3
84,6	15	8	44,5	15	8	37	1,2
83,5	15	27	0,25	15	27	22	1,125
83,7	15	51	46,5	15	51	30	1,005

Hygrom. Begin 47½ deg. End 48½ deg. Barom. Begin 30,110 End 30,110

84,8	16	45	26,25	16	45	48½	1,45
84,8	17	57	58,5	17	58	8	1,35
84,4	18	8	8,5	18	7	53½	1,05
84	18	30	34,75	18	30	27	1,125
84,2	18	51	59,5	18	51	32½	1,1

Hygrom. Begin 54½ deg. End 53 deg. Barom. Begin 30,142 End 30,070

87	20	10	5,5	20	10	23	1,15
86,6	20	31	55	20	31	26½	1,25
85,8	20	58	27	20	58	28½	1,025
86	21	20	54,5	21	20	31	1,125
85,6	21	43	11	21	43	38	1,1

1736 *February* 2, N. S.

Hygrom.	Begin	84½ deg.	Barom.	Begin	30,102
	End	85 deg.		End	30,102

83,8	22	32	31,5	22	32	54	1,275
83	22	48	31,5	22	48	32	1,25
83	23	10	10	23	10	33	1,2
83,8	23	28	8	23	27	58	1,125
84,4	23	53	31,5	23	53	45	1,005

1736 *February* 2, N. S.

Hygrom.	Begin	88½ deg.	Barom.	Begin	30,11
	End	84½ deg.		End	30,11

83,2	0	36	39,5	0	36	26½	1,45
83,2	0	49	59,5	0	47	13	1,25
83,6	0	58	59,5	0	58	51	1,075
83,2	1	20	3	1	19	24	1,125
83,0	1	39	49,5	1	39	38	1,1

1768 February o. s.

Hygro. { Begin 8½ dyg. / End 9 dyg. } Baro. { Begin / End } Inches. 30,140 / 30,132

Temperature.	Diff. Real.			Reappeared.			Arc of Vibration.
°	h.	'	"	h.	'	"	
81,0	8	48	8,5	9	48	17	1,101
81,5	8	50	48	9	50	52	1,8
82,0	9	11	18	9	11	33½	1,3
82,0	9	32	34,5	9	33	11	1,8
82,5	9	54	30	9	54	49	1,103

Hygro. { Begin 15½ dyg. / End 22½ dyg. } Baro. { Begin 30,115 / End 30,107 }

84,0	10	51	38	10	51	41	1,2
84,0	11	9	9	11	9	14½	1,8
87	11	14	58,5	11	14	46	1,103
88,5	11	26	6,25	11	26	19	1,70
89,0	11	27	56,0	11	27	33	0,975

Hygro. { Begin 29½ dyg. / End 30½ dyg. } Baro. { Begin 30,147 / End 30,143 }

88,0	12	48	9	12	53	13	1,175
88	12	50	58,5	12	56	22	1,2
89,0	1	7	41	1	7	24½	1,105
87	1	19	58,5	1	19	19	0,975
87,0	1	20	18,2	1	20	22	0,9

Hygro. { Begin 31½ dyg. / End 32 dyg. } Baro. { Begin 30,137 / End 30,132 }

84,5	9	24	14	9	24	54½	1,175
84,5	9	46	58,5	9	46	43	1,222
85,0	9	47	30,5	9	47	22	1,075
85,5	5	8	40,5	5	8	57	1,175
86	5	29	1	5	29	21	1,105

28th February o. s.

Hygro. { Begin 28½ dyg. / End 29½ dyg. } Baro. { Begin 30,120 / End 30,120 }

81,0	7	48	8,5	7	48	17	1,8
81,5	7	55	48	7	55	37	1,7
86,0	8	7	30,5	8	7	20	1,9
86,0	8	19	28	8	29	10½	1,1
88,0	8	30	20	8	30	37	1,010

26th February o. s.

Hygro. { Begin 14½ dyg. / End 30½ dyg. } Baro. { Begin / End } Inches. 30,130 / 30,132

Temperature.	Diff. Real.			Reappeared.			Arc of Vibration.
°	h.	'	"	h.	'	"	
82,5	8	42	8	8	42	18	1,5
83,0	8	58	43,5	8	58	56	1,8
83,0	9	9	28	9	9	53	1,7
83,0	9	17	1,75	9	17	36½	1,1
83	9	28	32	9	28	51	1,105

Hygro. { Begin 28 dyg. / End 31½ dyg. } Baro. { Begin 30,115 / End 30,102 }

91	11	49	58,25	11	50	3	1,8
90	12	1	19	12	1	33	1,5
89,5	12	12	58	12	13	40	1,4
89,0	12	23	58	12	24	17	1,3
89,0	12	35	58	12	35	35	1,7

Hygro. { Begin 33½ dyg. / End 34½ dyg. } Baro. { Begin 30,127 / End 30,120 }

94	1	41	59,5	1	42	31	1,175
94	1	58	58	1	58	51	1,175
94,5	2	3	58,5	2	4	8½	1,175
91,5	2	15	10,5	2	15	27	1,075
90,5	2	39	30,5	2	39	41½	1,175

Hygro. { Begin 32½ dyg. / End 33 dyg. } Baro. { Begin 30,180 / End 30,090 }

89,5	3	37	43,5	3	38	1	1,075
91,5	4	9	8,5	4	9	23	1,075
91,5	4	29	28,25	4	29	49	1,075
91,5	4	39	58	4	39	33	1,9
87,5	4	43	58	4	43	53	1,175

31st February o. s.

Hygro. { Begin 14½ dyg. / End 24½ dyg. } Baro. { Begin 29,190 / End 29,090 }

83,5	8	59	49	8	59	49	1,075
83,5	9	2	13,5	9	2	31	1,205
83,5	9	13	58,25	9	14	0	1,4
83	9	25	28,5	9	25	43	1,3
82,5	9	37	58,5	9	37	53½	1,4

[illegible] February a. m.

Hygro. Beginning 19 deg. End 20½ deg. Baron. Beginning 30,[illegible] Inches. End 30,[illegible]

Temperature.	Dec. Hill.			Dec. Rupprecht.			Arc of Vibration.
°	h.	′	″	h.	′	″	
[illegible]	10	43	52,5	13	46	21	1,5
[illegible]	10	57	50,5	10	57	47	1,375
[illegible]	11	07	50,5	11	9	50½	1,3
[illegible]	11	20	44,5	11	20	30½	1,8
[illegible]	11	32	17,[illegible]	11	32	29	1,125

Hygro. Begin 40½ deg. End 42½ deg. Baron. Begin 30,[illegible] End 30,[illegible]

[illegible]	12	45	42,5	12	45	57½	1,5
[illegible]	12	57	1,5	12	58	12½	1,375
[illegible]	1	9	48,5	1	9	29½	1,375
[illegible]	1	18	13	1	18	4½	1,175
[illegible]	1	26	18,5	1	26	21	1,075

Hygro. Begin 50 deg. End 48½ deg. Baron. Begin 30,[illegible] End 30,[illegible]

[illegible]	2	32	52	2	33	40½	1,65
[illegible]	2	41	57,5	2	47	40,5	1,55
[illegible]	2	56	7,5	2	56	29½	1,425
[illegible]	3	9	19	3	9	29	1,25
[illegible]	3	18	48,5	3	21	21	1,15

[illegible] February a. m.

Hygro. Begin 16½ deg. End 19½ deg. Baron. Begin 30,[illegible] End 30,[illegible]

[illegible]	7	31	40,5	7	35	1	1,075
[illegible]	7	46	50,5	7	46	44	1,025
[illegible]	7	59	6,5	7	59	29½	1,15
[illegible]	8	9	48,5	8	10	7	1,05
[illegible]	8	22	30,5	8	22	40	0,875

Hygro. Begin 17 deg. End 17½ deg. Baron. Begin 30,[illegible] End 30,[illegible]

[illegible]	8	29	34,[illegible]	8	39	42	1,125
[illegible]	8	32	37,5	8	34	45	1,[illegible]
[illegible]	8	3	13	8	3	29½	1,[illegible]
[illegible]	8	34	40,[illegible]	8	35	8	1,[illegible]
[illegible]	8	25	29,[illegible]	8	46	40	1,[illegible]

[illegible] February a. m.

Hygro. Beginning 30 deg. End 43½ deg. Baron. Beginning 30,[illegible] Inches. End 30,[illegible]

Temperature.	Dec. Hill.			Dec. Rupprecht.			Arc of Vibration.
°	h.	′	″	h.	′	″	
[illegible]	11	53	54,[illegible]	11	58	4½	1,225
[illegible]	11	45	49,5	11	45	20½	1,075
[illegible]	11	59	50,5	11	57	1	1,175
[illegible]	12	8	14	12	8	29	1,075
[illegible]	12	18	41,[illegible]	12	19	57½	1,0

Hygro. Begin 56½ deg. End 57 deg. Baron. Begin 30,[illegible] End 30,[illegible]

[illegible]	1	49	44	1	49	59½	1,125
[illegible]	2	00	50,50	2	1	11	1,025
[illegible]	2	17	20,[illegible]	2	18	21	1,125
[illegible]	2	23	30	2	23	59	1,15
[illegible]	2	35	4,5	2	35	18	1,025

Hygro. Begin 50½ deg. End 54½ deg. Baron. Begin 30,[illegible] End 30,[illegible]

[illegible]	4	10	6,5	4	10	21	1,025
[illegible]	4	21	50,5	4	21	28	1,125
[illegible]	4	30	48	4	32	8	1,025
[illegible]	4	41	17	4	44	27	1,075
[illegible]	4	55	40	4	56	17	1,15

[illegible] February a. m.

Hygro. Begin 21½ deg. End 20 deg. Baron. Begin 30,[illegible] End 30,[illegible]

[illegible]	6	52	13	6	59	20½	1,5
[illegible]	6	53	51	6	58	6½	1,5
[illegible]	6	45	54	6	46	40½	1,075
[illegible]	6	57	55	6	57	40	1,0
[illegible]	7	8	50,[illegible]	7	9	41	1,1

Hygro. Begin 23½ deg. End 23½ deg. Baron. Begin 30,[illegible] End 30,[illegible]

[illegible]	8	44	55,5	8	44	9½	1,125
[illegible]	8	50	[illegible]	8	50	41	1,05
[illegible]	8	56	20,5	8	56	39	1,15
[illegible]	9	10	40	9	10	10½	1,075
[illegible]	9	21	44,5	9	22	2	1,05

[illegible] February A. M.

Hygro. Beginning 28 ° dry. End 29½ dry. Barom. Beginning 30,[illegible] Inches. End 30,[illegible]

Temperature.	Disc. Mid.	Disc. Reappeared.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
84,0	12 49 52,5	12 47 2½	1,4
84,3	12 54 32,5	12 54 43	1,3
83,8	11 6 40,5	11 6 21	1,2
87,2	11 17 50	11 18 1	1,1
88,8	11 25 20	11 26 41	1,0

Hygro. Begin 45½ dry. End 54½ dry. Barom. Begin 30,[illegible] End 30,[illegible]

93,3	12 32 6,5	12 32 17	1,[illegible]
93,3	1 3 32,5	1 3 45	1,2
91,2	1 14 38	1 14 11	1,[illegible]
90,3	1 26 27,5	1 26 35	1,[illegible]
92,8	1 37 42	1 37 57	0,[illegible]

Hygro. Begin 58 dry. End 51 dry. Barom. Begin 30,[illegible] End 30,[illegible]

97,2	2 43 12	2 43 23	1,[illegible]
97,5	2 54 28	2 54 49½	1,[illegible]
97,7	3 5 40,5	3 6 1	1,2
96,4	3 17 6,5	3 17 [illegible]	1,1
95,8	3 28 26,5	3 28 45	1,[illegible]

[illegible] February A. M.

Hygro. Begin 1 unit. End 0 Barom. Begin 30,[illegible] End 30,[illegible]

79	8 21 58	8 22 9	1,[illegible]
79,4	8 33 38,5	8 33 [illegible]	1,[illegible]
79,2	8 45 58	8 45 [illegible]	1,[illegible]
79	8 57 [illegible]	8 57 [illegible]	1,[illegible]
79	9 8 40,5	9 9 13	1,[illegible]

Hygro. Begin 9 dry. End 60½ inches. Barom. Begin 30,[illegible] End 30,[illegible]

79,8	10 14 15	10 18 [illegible]	1,[illegible]
80,3	10 30 10,5	10 30 14	1,[illegible]
80,7	10 41 44,5	10 41 [illegible]	1,[illegible]
80,8	10 53 [illegible]	10 53 41	1,[illegible]
80,9	11 5 [illegible]	11 5 [illegible]	1,[illegible]

[illegible] February A. M.

Hygro. Beginning 14½ dry. End 29½ dry. Barom. Beginning 30,[illegible] Inches. End 30,[illegible]

Temperature.	Disc. Mid.	Disc. Reappeared.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
83,8	12 17 [illegible]	12 17 [illegible]	1,3
84,5	12 28 [illegible]	12 28 47½	1,2
84,7	12 40 11	12 40 [illegible]	1,[illegible]
85	12 51 [illegible]	12 52 5	1,[illegible]
85,5	1 3 [illegible]	1 3 49½	0,[illegible]

Hygro. Begin 28½ dry. End 29½ dry. Barom. Begin 30,[illegible] End 30,[illegible]

80,8	2 21 [illegible]	2 21 16	1,4
80,2	2 32 [illegible]	2 32 46	1,3
80,9	2 44 [illegible]	2 44 13	1,2
80,8	2 55 [illegible]	2 55 42	1,[illegible]
80,6	3 6 [illegible]	3 7 13	1,[illegible]

Hygro. Begin 40½ dry. End 41 dry. Barom. Begin 30,[illegible] End 30,[illegible]

80,6	4 14 41	4 14 54	1,4
80	4 26 8,5	4 26 23	1,2
80,5	4 37 38	4 37 51	1,2
80,4	4 49 6,5	4 49 [illegible]	1,[illegible]
80,6	5 00 [illegible]	5 00 [illegible]	1,[illegible]

[illegible] February A. M.

Hygro. Begin 8½ dry. End 8½ dry. Barom. Begin 30,[illegible] End 30,[illegible]

80,8	6 31 [illegible]	6 31 [illegible]	1,[illegible]
80,8	6 43 [illegible]	6 43 [illegible]	1,[illegible]
80,5	6 55 [illegible]	6 55 [illegible]	1,[illegible]
80,7	7 6 [illegible]	7 7 7	1,[illegible]
80,8	7 18 [illegible]	7 18 55	0,[illegible]

Hygro. Begin 11½ dry. End 15 dry. Barom. Begin 30,[illegible] End 30,[illegible]

81,5	8 35 [illegible]	8 35 [illegible]	1,4
82,8	8 46 [illegible]	8 47 [illegible]	1,[illegible]
82,8	8 58 [illegible]	8 58 53	1,2
82,5	9 10 [illegible]	9 10 [illegible]	1,1
82,6	9 22 [illegible]	9 22 21	1

25th February s. n.

Barom. { Beginning 29½ dry. / End 27½ dry. } Inches. { Beginning 30,054 / End 30,050 }

Temperature.	Dist. Hab.	Dist. Interpenetrat.	Arc of Oscillation.
°	h. ′ ″	h. ′ ″	
83,5	10 48 32	10 49 43	1,171
84,5	11 1 9,5	11 1 [illegible]	1,171
85	11 14 45	11 15 28	1,175
86	11 24 40,55	11 25 23	1,1
87	11 34 35	11 35 9	1,080

Hygrom. { Begin 47 dry. / End 50½ dry. } Barom. { Begin 30,049 / End 30,035 }

80	12 44 8,25	12 44 19	1,2
82	12 54 32	12 55 43	1,195
83	1 6 50	1 7 9	1,195
84,5	1 19 28,25	1 19 20	1,05
84,5	1 29 45	1 29 59	0,875

Hygrom. { Begin 58 dry. / End 60½ dry. } Barom. { Begin 30,023 / End 30,009 }

81,5	9 25 51,5	9 26 37	0,875
83	9 40 42,5	9 40 59	1,0
83,5	9 51 5,5	9 51 17	1,1
84,1	9 59 22	9 59 40	1,080
84,8	10 [illegible] 46	10 [illegible] 3	0,875

1st March s. n.

Hygrom. { Begin 34 moist. / End 0 moist. } Barom. { Begin 30,008 / End 30,005 }

77,5	9 29 21,5	9 32 40½	1,375
77,5	9 [illegible] 5	9 [illegible] 9½	1,375
77,5	9 [illegible] 55,5	9 [illegible] 32½	1,125
78,8	9 50 37,5	9 50 59	1,075
80,5	9 59 21,5	9 59 47	0,875

Hygrom. { Begin 69½ dry. / End 68½ dry. } Barom. { Begin 30,015 / End 30,008 }

80,8	8 55 42,5	8 55 50,5	1,185
80,5	9 7 59,5	9 8 38,5	1,195
80,8	9 19 9	9 19 25,5	1,195
81	9 29 45,25	9 29 51	1,175
81,1	9 40 36,5	9 40 47	1,09

1st March s. n.

Barom. { Beginning 4 dry. / End 0½ dry. } Inches. { Beginning 30,050 / End 30,050 }

Temperature.	Dist. Hab.	Dist. Interpenetrat.	Arc of Oscillation.
°	h. ′ ″	h. ′ ″	
80,8	10 48 18,5	10 48 28	1,35
81,8	10 59 54,5	11 0 6	1,45
83,8	11 11 29,5	11 11 41	1,295
84,8	11 23 6,5	11 23 17	1,25
85,8	11 34 46,5	11 34 53	1,15

Hygrom. { Begin 49 dry. / End 51 dry. } Barom. { Begin 30,035 / End 30,030 }

79,5	12 55 38	12 55 52,5	1,825
80	1 7 48,25	1 8 58,5	1,305
82,5	1 18 29	1 18 43	1,225
84	1 29 34	1 29 49	1,19
84,8	1 40 38	1 41 9	1,175

Hygrom. { Begin 52½ dry. / End 54½ dry. } Barom. { Begin 30,031 / End 30,026 }

78	9 49 12,5	9 49 28,5	1,325
84,5	9 59 55,5	9 59 45	1,275
84,5	10 10 36,5	10 10 5	1,3
84,8	10 20 8	10 20 8	1,2
84,8	10 29 39	10 30 [illegible]5	1,195

3d March s. n.

Hygrom. { Begin 59½ moist. / End 56½ moist. } Barom. { Begin 30,072 / End 30,070 }

76,8	8 17 9,5	8 17 26,5	1,325
76,5	8 28 50	8 29 10,5	1,3
77,8	8 40 28,5	8 40 51	1,2
77,8	8 52 15,5	8 52 37	1,1
78,8	9 4 1,5	9 4 21,5	1,095

Hygrom. { Begin 57½ moist. / End 0 dry. } Barom. { Begin 30,092 / End 30,086 }

80,8	10 30 18,25	10 30 [illegible]3,75	1,375
80,25	10 [illegible] 47	11 [illegible] 4,75	1,075
80,8	11 [illegible] [illegible],25	11 [illegible] 44,25	1,175
82,8	11 [illegible] 7	11 [illegible] 28	1,075
84	11 [illegible] 42	11 [illegible] 3,75	1

3d March s. m.

Hygr. { Beginning 19 deg. / End 27½ deg. } Barom. { Beginning 30,[illegible] / End 30,[illegible] } Inches.

Temperature.	Dose. Hol.	Dose. Reappeared.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
85,9	11 53 28,25	11 52 48,75	1,175
85,9	1 5 10,25	1 8 21	1,35
85,8	1 16 40,5	1 16 35	1,67
85,5	1 28 29,25	1 28 32,75	1,175
85	1 39 54	1 40 9	1,075

Hygr. { Begin 33 deg. / End 38 deg. } Barom. { Begin 30,[illegible] / End }

85,2	2 1 49	2 1 33	1,65
85	2 13 9	2 13 29	1,35
85,5	2 24 37	2 24 41	1,85
85	2 36 6,5	2 36 21	1,175
85,6	2 47 55	2 47 51	1,1

Hygr. { Begin 37½ deg. / End 38½ deg. } Barom. { Begin 30,[illegible] / End 30,[illegible] }

86,8	5 7 36	5 7 42,5	1,55
86,8	5 18 4,75	5 18 11	1,175
85,8	5 28 37,75	5 28 53	1,175
85,5	5 40 8,5	5 40 29	1,1
84,8	5 51 45	5 54 7	1,075

4th March s. m.

Hygr. { Beginning 25½ moist. / End 29 moist. } Barom. { Beginning 30,[illegible] / End 30,[illegible] } Inches.

Temperature.	Dose. Hol.	Dose. Reappeared.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
82,8	11 [illegible] [illegible]	11 [illegible] [illegible]	1,275
82,8	11 7 [illegible]	11 7 [illegible]	1,55
82,4	11 18 [illegible]	11 18 [illegible]	1,175
82,3	11 30 [illegible]	11 30 [illegible]	1,4
82,8	11 42 [illegible]	11 42 17	1,025

Hygr. { Begin 3½ moist. / End 5½ deg. } Barom. { Begin 30,[illegible] / End 30,[illegible] }

85,6	2 4 [illegible]	2 4 41	1,4
85,6	2 16 [illegible]	2 16 [illegible]	1,2
85	2 27 [illegible]	2 27 50	1,3
85,5	2 39 [illegible]	2 39 [illegible]	1,175
85,5	2 50 51	2 51 2	1,05

Hygr. { Begin 5 deg. / End 7 deg. } Barom. { Begin 30,[illegible] / End 30,[illegible] }

82,8	4 18 [illegible]	4 18 21	1,4
82	4 30 [illegible]	4 30 [illegible]	1,3
81,8	4 41 [illegible]	4 41 47	1,075
81,8	4 53 16	4 53 [illegible]	1,25
82	5 4 [illegible]	5 5 [illegible]	1,075

5th March s. m.

Hygr. { Begin 6½ moist. / End 25 moist. } Barom. { Begin 30,[illegible] / End 30,[illegible] }

77,4	7 13 8,5	7 13 22	1,4
77,7	7 24 [illegible]	7 24 11	1,2
77,8	7 36 [illegible]	7 36 [illegible]	1,2
77,8	7 48 [illegible]	7 48 [illegible]	1,1
77,7	8 [illegible] [illegible]	8 [illegible] [illegible]	1,05

Hygr. { Begin 9½ moist. / End 31 moist. } Barom. { Begin 30,[illegible] / End 30,[illegible] }

78	8 15 1	8 15 15	1,275
78,2	8 26 [illegible]	8 27 1	1,275
78,6	8 38 [illegible]	8 38 [illegible]	1,175
78,5	8 50 [illegible]	8 50 [illegible]	1,1
78,8	9 1 [illegible]	9 2 [illegible]	1

6th March s. m.

Hygr. { Begin 1 moist. / End 3 moist. } Barom. { Begin 30,[illegible] / End 30,[illegible] }

80,7	6 41 18	6 41 36	1,475
80	6 57 37	6 58 19	1,375
80	7 3 [illegible]	7 3 [illegible]	1,075
80,2	7 [illegible] [illegible]	7 [illegible] 57	1,175
80,3	7 [illegible] 8	7 [illegible] [illegible]	1,075

Hygr. { Begin 8 deg. / End 17½ deg. } Barom. { Begin 30,[illegible] / End 30,[illegible] }

84,8	8 [illegible] [illegible]	8 [illegible] [illegible]	1,275
85,8	9 4 17	9 4 [illegible]	1,075
85,8	9 [illegible] 8	9 10 15	1,075
85,8	9 [illegible] [illegible]	9 [illegible] [illegible]	1,05
85,6	9 [illegible] [illegible]	9 [illegible] [illegible]	1,05

10th March a. m.

Hygrom. { Begin. 23½ dry. / End 35 dry. }

Barom. { Begin. Inches. 30,143 / End 30,137 }

Temperature.	Hour.			Sky.			Arc of Elevation.
	Hh.	′	″		′	″	
63	10	32	28	59	55	01	1,4
63	11	0	34	57	7	5	1,175
63,5	11	18	39	11	14	49	1,171
63,5	11	28	57	11	37	31	1,1
63,5	11	38	0	11	49	01	1,015

10th March p. m.

Hygrom. { Begin. 13 dry. / End 80½ dry. }

Barom. { Begin. Inches. 29,119 / End 29,132 }

Temperature.	Hour.			Sky.			Arc of Elevation.
	Hh.	′	″		′	″	
64,5	12	3	57,5	10	1	31	1,253
65,5	12	15	1,5	10	12	18	1,199
65,7	12	28	31,5	10	24	34,5	1,243
66,5	12	36	55	10	31	56	1,032
66	12	46	4,5	10	40	10,5	0,973

Hygrom. { Begin 17½ dry. / End 19½ dry. }

Barom. { Begin. 30,000 / End 30,001 }

Temperature.	Hour.			Sky.			Arc of Elevation.
	Hh.	′	″		′	″	
62,5	12	50	43	10	40	47	1,373
63,5	1	11	37	1	11	37,5	1,273
63,5	1	28	1,5	1	28	10,5	1,173
63	1	36	47	1	36	53	1,073
63,5	1	48	13,5	1	48	27,5	1

Hygrom. { Begin 24½ dry. / End 41 dry. }

Barom. { Begin. 29,980 / End 29,979 }

Temperature.	Hour.			Sky.			Arc of Elevation.
	Hh.	′	″		′	″	
67	2	35	31	2	15	50,5	1,4
67,5	2	47	34	2	27	52	1,3
68	2	56	58	2	36	34,5	1,2
69	3	10	27,5	2	50	42	1,1
69	3	18	0	2	58	19,5	1,015

Hygrom. { Begin 28½ dry. / End 32 dry. }

Barom. { Begin. 29,866 / End 29,879 }

Temperature.	Hour.			Sky.			Arc of Elevation.
	Hh.	′	″		′	″	
65	3	50	14,5	3	36	05	1,200
65,5	3	7	49	3	0	0	1,102
65	3	19	29	3	19	41	1,21
64,5	3	31	7	3	31	00	1,00
63,5	3	43	59	3	43	7	1

Hygrom. { Begin 40½ dry. / End 57½ dry. }

Barom. { Begin. 29,979 / End 29,979 }

Temperature.	Hour.			Sky.			Arc of Elevation.
	Hh.	′	″		′	″	
67,5	4	15	14	4	15	19	1,413
67,5	4	29	41	4	30	24	1,314
68,5	4	39	35,5	4	39	48	1,2
69,5	4	49	50,5	4	50	1	1,1
69,5	5	1	05	5	1	01	1,0

11th March a. m.

Hygrom. { Begin 13½ dry. / End 43½ dry. }

Barom. { Begin. 29,815 / End 30,158 }

Temperature.	Hour.			Sky.			Arc of Elevation.
	Hh.	′	″		′	″	
61,5	7	14	1	7	13	11	1,5
61,7	7	25	41,5	7	25	53,5	1,4
62	7	37	9,5	7	37	23	1,3
62,5	7	50	0	7	50	12,5	1,2
63	8	10	10	8	10	50	1,105

11th March p. m.

Hygrom. { Begin 14 dry. / End 14½ dry. }

Barom. { Begin. 30,037 / End 30,115 }

Temperature.	Hour.			Sky.			Arc of Elevation.
	Hh.	′	″		′	″	
64	7	26	4	7	25	14,5	1,2
63,5	7	40	43,5	7	40	59	1,1
63,5	7	58	07	7	58	38	1,15
63,7	8	10	10	8	10	07	1,015
64,5	8	22	17,5	8	22	13	0,95

12th March a. m.

Hygrom. { Begin 52 moist. / End 57½ moist. }

Barom. { Begin. 29,812 / End 29,830 }

Temperature.	Hour.			Sky.			Arc of Elevation.
	Hh.	′	″		′	″	
62,5	9	28	8	9	28	19	1,1
62,7	9	44	47,5	9	44	58	1,075
62,7	9	58	32,5	9	58	43	1,175
62,7	10	8	15	10	8	29	1,165
63,4	10	20	0	10	20	09	0,94

12th March p. m.

Hygrom. { Begin 51 moist. / End 51 moist. }

Barom. { Begin. 29,100 / End 29,100 }

Temperature.	Hour.			Sky.			Arc of Elevation.
	Hh.	′	″		′	″	
60,5	9	20	0,5	9	20	11	1,1
61,5	9	37	46	9	37	56,5	1,0
62,5	9	49	29	9	49	43	0,9
61,5	10	11	10	10	11	05	1,1
62,5	10	20	57	10	20	37,5	1,025

15th *March* 1. P.

Hygrom. { Beginning 4½ degr. / End 1½ degr. } Barom. { Beginning 30,110 inches / End 30,090 }

Temperature.	Distance. Half.	Reappeared.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
51,4	11 55 58	11 39 59	1,85
53,8	11 46 57	11 43 8	1,268
52,5	11 56 34,5	11 56 49,5	1,05
51,5	12 8 16	12 8 29	1,178
51,8	12 20 26,25	12 20 11	1,1

Hygrom. { Beginning 60 / End 3 degr. } Barom. { Beginning 30,090 / End 30,080 }

52,5	12 28 40	12 33 56,5	1,358
53,8	12 45 58	12 45 59,5	1,575
54	12 57 6,25	12 57 19	1,175
53,4	1 8 41,5	1 8 56,5	1,075
53,8	1 20 56	1 20 43,5	1

Hygrom. { Beginning 71 degr. / End 5½ degr. } Barom. { Beginning 30,080 / End 30,060 }

54	2 33 36,5	2 33 49	1,3
53,8	2 47 58	2 47 52	1,3
54,2	2 58 40	2 58 1	1,2
54,2	3 10 36,5	3 10 26	1,105
54,2	3 21 56	3 21 15	1,09

Hygrom. { Beginning 8 degr. / End 8½ degr. } Barom. { Beginning 30,060 / End 30,050 }

54	3 57 51	3 57 39	1,175
54	4 28 54	4 28 7	1,275
54	4 40 28	4 40 41	1,075
53	4 52 4	4 52 15,5	1,2
53,8	5 15 42	5 15 57	1,1

15th *March* 2. P.

Hygrom. { Beginning 82½ moist. / End 81½ moist. } Barom. { Beginning 30,075 / End 30,065 }

79,2	6 32 21	6 32 39	1,45
79,3	6 43 3	6 43 50	1,205
79,6	6 56 43	6 57 1	1,059
79,8	7 8 20,5	7 8 44,5	1,45
79,8	7 20 53	7 20 37,5	1,059

15th *March* 2. P.

Hygrom. { Beginning 87½ moist. / End 81½ moist. } Barom. { Beginning 30,107 / End 30,100 }

Temperature.	Distance. Half.	Reappeared.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
51,2	9 49 24	9 50 5	1,45
51,4	9 1 22½	9 1 41,5	1,205
51,7	9 12 14,5	9 12 33	1,105
51,8	9 24 56,25	9 25 6	1,158
52,2	9 36 38	9 36 54,5	1,175

Hygrom. { Beginning 79½ moist. / End 2½ degr. } Barom. { Beginning 30,100 / End 30,110 }

53	10 55 43	10 56 2	1,895
53,4	11 5 59	11 6 19	1,205
54,2	11 16 56	11 17 6,5	1,095
54,2	11 28 28,25	11 28 49,5	1,125
54,4	11 40 0,5	11 40 17	1,05

Hygrom. { Beginning 87½ degr. / End 69½ degr. } Barom. { Beginning 30,110 / End 30,100 }

55,5	12 53 34	12 53 51	1,44
56	1 5 40,5	1 5 5,5	1,28
56,6	1 16 31,5	1 16 54	1,08
56,8	1 27 49,25	1 28 5,5	1,13
57	1 39 8,5	1 39 27	1,175

Hygrom. { Beginning 42½ degr. / End 42 degr. } Barom. { Beginning 30,100 / End 30,090 }

54,5	2 48 28	2 48 45,5	1,13
54,2	2 59 36	2 59 8	1,25
54,2	3 11 20,25	3 11 21	1,075
53,8	3 22 53,5	3 23 10,5	1,175
54,6	3 34 28,5	3 34 42	1,2

14th *March* 2. P.

Hygrom. { Beginning 82½ moist. / End 71½ moist. } Barom. { Beginning 30,080 / End 30,070 }

52	7 51 52,5	7 52 10	1,1
51,8	7 32 39	7 32 58	1,3
51,5	7 44 19	7 44 34	1,2
52	7 55 57,25	7 56 17	1,1
52	8 7 40,5	8 8 1	1,085

16th March a. m.

Attr. { Beginning 7 swing. Barom. { Beginning 30,108
End 6 swing. End 30,107

Temperature.	Hab.	Reappeared.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
91,8	8 37 30,33	8 37 39	1,185
92,3	8 39 5	8 39 18,5	1,781
92,5	8 50 45	8 50 59	1,215
92,4	9 2 20	9 2 44,5	1,15
92,4	9 14 11,25	9 14 27	1,09

Hygro. { Begin 11½ dry. Barom. { Begin 30,108
End 2½ dry. End 30,108

93,0	14 29 30	14 30 45	1,175
93,5	14 44 8,25	14 48 17	1,175
93,5	15 53 39	15 53 49,5	1,075
93,2	16 8 9	16 8 20,5	1,08
93,2	16 22 37	16 16 54,5	0,925

Hygro. { Begin 7½ dry. Barom. { Begin 30,095
End 12½ dry. End 30,090

91,5	18 30 09	18 30 9	1,085
92,0	18 44 39	18 45 24	1,088
91,8	18 59 10,5	18 59 1,75	1,125
91,7	19 13 43	19 13 59	1,08
91,8	19 28 13	19 13 44,75	0,975

Hygro. { Begin 17 dry. Barom. { Begin 30,078
End 23 dry. End 30,040

94,5	23 1 39	23 1 7	1,1
91,3	23 16 01,5	23 15 21	1,3
94	23 30 43	23 31 37	1,2
90,9	23 45 16	23 46 09	1,125
92,0	23 59 36,5	23 47 23	1,075

18th March a. m.

Hygro. { Begin 21½ dry. Barom. { Begin 30,140
End 24½ dry. End 30,140

77,6	9 34 9	9 19 13	1,1
78	9 37 34	9 39 4	1,2
78	9 39 47	9 50 34,75	1,2
78	9 51 30,5	9 51 41,75	1,125
78,2	9 3 49	9 9 53,5	1,085

16th March a. m.

Attr. { Beginning 30½ swing. Barom. { Beginning 30,107
End 99½ swing. End 30,130

Temperature.	Hab.	Reappeared.	Arc of Vibration.
°	h. ′ ″	h. ′ ″	
90,8	10 28 9,25	10 28 21	1,4
91,7	10 30 54,5	10 31 5	1,3
89	11 9 37	11 9 49	1,2
92,5	11 24 24	11 24 33,5	1,1
92,5	11 38 8	11 38 19,5	1,08

Hygro. { Begin 99½ moist. Barom. { Begin 30,130
End 31½ moist. End 30,110

94,7	18 32 13	18 32 03	1,275
94	18 46 55,75	18 47 8,75	1,05
95,4	1 00 55,5	1 00 07	1,15
93,4	1 15 19	1 15 30,75	1,06
94	1 29 09	1 29 19,5	1

Hygro. { Begin 99 dry. Barom. { Begin 30,090
End 31 dry. End 30,060

93	2 20 50	2 21 0,5	1,8
93	2 42 27	2 42 39,5	1,3
93,8	2 57 51	2 58 4,5	1,2
93	3 3 09	3 3 27	1,12
93,8	3 16 53	3 17 9	1,05

18th March a. m.

Hygro. { Begin 1 dry. Barom. { Begin 30,060
End 00½ moist. End 30,021

81,8	7 54 48	7 54 57	1,375
82,6	8 6 21	8 6 49	1,275
83,5	8 18 16,5	8 18 27,5	1,175
83,8	8 30 00,25	8 30 11,75	1,075
82,6	8 41 46	8 41 59	1

Hygro. { Begin 11 dry. Barom. { Begin 30,070
End 5 dry. End 30,07

85,1	10 18 9,5	10 18 21,5	1,275
85,5	10 29 44,5	10 29 56,75	1,075
84	10 41 20,50	10 41 32,75	1,175
85,5	10 53 0,75	10 53 13,5	1,075
87,4	11 4 38,5	11 4 51,5	1

1818 March 2. P.M.

Hygrom. { Begin 49½ dyg. / End 48½ dyg. } Barom. { Begin 30,015 / End 30,003 }

Temperature.	Dew. Hygrom. h. ' "	Dew. Barom. h. ' "	Arc of Vibration.
94,5	12 9 30,3	12 9 44	1,83
95,2	12 21 50	12 21 7	1,35
95	12 29 44,5	12 29 23	1,05
95,8	12 45 49,5	12 47 47	1,19
97,2	12 55 14	12 55 52,5	1,075
95,5	3 1 46	3 1 59,5	1,6
95,5	3 19 8	3 19 17,5	1,8
95,5	3 34 55	3 34 27	1,375
95,5	3 51 23	3 52 3,5	1,2
95,8	3 47 28,5	3 47 59	1,9

Hygrom. { Begin 48½ dyg. / End 49 dyg. } Barom. { Begin 30,006 / End 30,005 }

95,5	3 30 55	3 31 3	1,825
95,0	3 3 25,5	3 3 29	1,305
95,5	4 13 45	4 13 58	1,205
95,2	4 25 13	4 25 25	1,175
95,2	4 36 49	4 36 57	1,2

18th March A. M.

Hygrom. { Begin 71½ moist. / End 70½ moist. } Barom. { Begin 29,975 / End 30,057 }

78,5	8 39 27	8 39 47	1,4
79,2	8 41 59	8 41 54	1,305
79,4	8 53 9,5	8 53 21	1,255
80	9 4 50	9 5 10	1,15
80	9 16 45	9 17 00	1,075
80,2	8 42 24,5	8 42 31,5	1,4
80,5	8 53 36	8 54 8	1,2
81	9 5 44	9 5 55	1,0
81,2	9 17 55	9 17 48,5	1,1
80,5	9 29 15	9 29 34	1

1818 March A. M.

Hygrom. { Begin 51½ moist. / End 51 moist. } Barom. { Begin 29,[illegible] / End 29,[illegible] }

Temperature.	Dew. Hygrom. h. ' "	Dew. Barom. h. ' "	Arc of Vibration.
85	10 25 32	10 25 41	1,4
85,8	10 39 38	10 41 8,5	1,2
84,7	10 52 27	10 52 47	1,0
85,2	11 8 39,5	11 8 49	1,1
86,8	11 18 55	11 18 51	1,805
91,2	10 30 50	10 30 57	1,4
90,8	10 45 45,5	10 45 57	1,2
90,2	10 55 29	10 56 37	1,2
92	11 8 45	11 8 51	1,1
91,8	11 18 17	11 18 18,75	1,05
93,2	9 49 49	9 49 59	1,275
92,2	9 58 1,5	9 58 15	1,055
92,5	10 7 24,75	10 7 31,5	1,275
92,8	10 18 15,5	10 18 9,5	1,1
92,8	10 29 50	10 29 52	1
93,2	9 39 49	9 39 59	1,275
92,8	9 48 1,5	9 48 15	1,055
92,8	9 57 24,75	9 57 31,5	1,275
92,8	10 8 15,5	10 8 9,5	1,1
92,8	10 19 50	10 19 52	1

1818 March A. M.

Hygrom. { Begin 18½ moist. / End 19½ moist. } Barom. { Begin 29,[illegible] / End 29,[illegible] }

79,7	7 23 39,75	7 23 58	1,3
80	7 42 8	7 42 21,5	1,1
80	7 58 52,5	7 59 6	1,075
80,2	8 18 47	8 18 55,5	1,275
80,2	8 38 53	8 39 11,5	1,1
99	10 33 8	10 33 18	1,15
97,8	10 50 58	10 50 50	1,35
97,8	11 08 32,5	11 08 43	1,075
98,5	11 00 14	11 00 26	1,15
81,7	11 11 32	11 11 8	1,05

20th March a. m.

Hygro. { Beginning 3½ deg. / End 5 deg. }

Barom. { Beginning 30,078 / End 30,058 } Inches.

Temperature.	Dist. Hid.			Dist. Reappeared.			Arc of Vibration.
°	h.	′	″	h.	′	″	
85,5	12	14	20,5	12	14	38	1,5
85,4	12	26	5	12	26	14	1,4
84,9	12	37	42	12	37	53	1,3
82,7	12	49	22	12	49	35	1,2
83,2	1	1	4	1	1	19	1,1

20th March a. m.

Hygro. { Beginning 5 deg. / End 11½ deg. }

Barom. { Beginning 30,018 / End 30,018 } Inches.

Temperature.	Dist. Hid.			Dist. Reappeared.			Arc of Vibration.
°	h.	′	″	h.	′	″	
84	2	28	7	2	28	17	1,4
84,8	2	39	46	2	39	57	1,3
84,3	2	51	25	2	51	39	1,2
86	3	3	9	3	3	20,5	1,125
85,9	3	14	48	3	15	1,5	1,075

Hygro. { Begin 20½ deg. / End 22½ deg. }

Barom. { Begin 30,013 / End 30,018 }

85,4	4	14	22	4	14	53	1,4
84,8	4	26	22,5	4	26	21	1,3
84	4	37	59	4	38	19	1,2
82	4	49	40	4	49	53	1,125
82,4	5	1	29	5	1	57	1,075

Observations for the Latitude.

1823 Month.		Names.	Double Meridian Altitude.			Error of Sextant.	Height of the Therm.	Height of the Barom.	Remarks.
			°	′	″	′ ″	°	Inches.	
Jan.	17	Columbia . .	112	37	30	−0 40	84	30,00	
	18	Sun's U. L. . .	136	28	15	0 40,6	87	30,10	
	20	Capella . . .	88	33	00	0 50	89	30,11	
	21	Sun's U. L. . .	140	21	50	0 50	87	30,10	
	22	Aldebaran . .	147	48	00	0 30	84	30,11	
		Sirius . . .	147	00	30	0 30	84	30,10	
	23	Sun's U. L. . .	141	16	15	0 30	88,8	30,11	
	24	Sun's U. L. . .	141	42	45	0 30	86	30,11	
	25	Capella . . .	88	30	00	0 30	81,5	30,10	
		Sirius . . .	146	59	30	0 30	81,5	30,10	
	27	Sun's L. L. . .	142	9	15	0 15	85,7	30,01	
		Canopus . .	74	48	00	0 15	85,7	30,01	
		Sirius . . .	147	00	00	0 15	85,7	30,00	
	28	Sun's U. L. . .	143	42	00	0 15	85,2	30,19	
	29	Sun's U. L. . .	144	14	30	0 15	84,5	30,21	
	30	Sun's U. L. . .	144	45	45	0 27,5	81	30,11	
	31	Sun's L. L. . .	144	14	00	0 27,5	87,1	30,19	
Feb.	2	Sun's U. L. . .	139	25	20	0 15	87,5	30,04	
	5	Sun's L. L. . .	147	6	50	0 25,6	85	30,11	
	6	Canopus . .	74	48	45	0 25,6	77	30,00	
		Canis Maj. . .	102	31	15	0 25,6	77	30,00	
	8	Sun's U. L. . .	150	9	45	0 25	85,4	30,00	
		Aldebaran . .	147	47	30	0 15	81,9	30,11	
		Capella . . .	88	29	00	4 0 29,05	81,9	30,10	

1823 Month.		Names.	Double Meridian Altitude.			Error of Sextant.	Height of the Thermo.	Height of the Barom.	Remarks.
			°	′	″	′ ″	°	Inches.	
Feb.	8	Canopus . .	74	46	30	+0 29,00	81,8	30,11	
		Canis Maj. . .	122	29	30	0 29,00	81,8	30,11	
		Canis Maj. . .	127	43	40	0 29,00	81,8	30,11	
		Canis Maj. . .	122	9	20	0 29,00	81,8	30,10	
		Castor . . .	115	32	40	0 29,00	81,8	30,11	
		Pollux . . .	123	12	00	0 29,00	81,8	30,17	
	9	Sun's U. L. . .	150	40	60	—0 25	85,4	30,10	
		Capella . . .	88	28	45	+0 29,00	82,6	30,10	
		Pollux . . .	123	10	40	0 29,00	82,6	30,12	
	10	Canopus . .	74	47	15	0 29,6	84,3	30,11	
	11	Capella . . .	88	28	00	0 30,8	84,2	30,10	
		Canopus . .	74	46	35	0 30,8	84,2	30,10	
		Canis Maj. . .	122	28	30	0 30,8	84,2	30,10	
	12	Capella . . .	88	28	40	0 10,67	86,2	30,11	
		Tauri . . .	123	10	20	0 10,67	86,2	30,10	
		Canopus . .	74	47	55	0 10,67	86,2	30,11	
	14	Canopus . .	74	47	5	0 10,67	84,3	30,00	
		Castor . . .	115	31	30	0 25	84,3	30,01	
		Pollux . . .	123	11	55	0 25	84,3	30,01	
	20	Canopus . .	74	45	40	0 25	82	30,00	
	21	Tauri . . .	123	10	25	0 25	78,9	30,01	
Mar.	13	Castor . . .	115	33	40	0 2,5	82	29,91	
		Pollux . . .	123	11	15	0 2,5	82	29,91	

For the Time, Longitude and Rates of

Chronometers.

1823 Month.		Double Altitudes of the Sun.	Times by Chronometer *Eccentric*.			Error of sextant.	Remarks.
		° ′	h.	′	″	″ ″	
Dec.	22	120 00 U. L. . .	22	1	60	1 5	
		120 00 L. L. . .		7	40		
		122 00 U. L. . .		9	56		
		122 00 L. L. . .		12	43		
	23	87 00 U. L. . .	19	36	16	0 30,67	
		87 00 L. L. . .		38	51		
		89 00 U. L. . .		41	2		
		89 00 L. L. . .		43	43		
	24	67 00 U. L. . .	19	50	26	0 30,67	
		67 00 L. L. . .		52	53		
		69 00 U. L. . .		54	50		
		69 00 L. L. . .		57	28		
		71 00 U. L. . .		59	24		
		71 00 L. L. . .	20	2	3		
	25	83 00 U. L. . .	20	28	6	0 45	
		83 00 L. L. . .		30	49		
		85 00 U. L. . .		29	53		
		85 00 L. L. . .		35	24		

1822 Month.	Double Altitudes of the Sun.	Time by Chronometer Eureka.	Error of Sextant.	Remarks.
	° ′	h. ′ ″	″	
Dec. 23	87 00 U. L. . .	37 30		
	87 00 L. L. . .	40 11		
26	89 00 U. L. . .	20 43 1	2 16,5	
	89 00 L. L. . .	45 28		
	91 00 U. L. . .	47 49		
	91 00 L. L. . .	50 28		
28	81 00 U. L. . .	20 25 11	0 45	
	81 00 L. L. . .	28 44		
	83 00 U. L. . .	30 31		
	83 00 L. L. . .	33 26		
	87 00 L. L. . .	1 40 16	0 46	
	87 00 U. L. . .	48 50		
	95 00 L. L. . .	51 27		
	95 00 U. L. . .	52 17		
30	89 00 U. L. . .	20 45 29	0 45	
	89 00 L. L. . .	48 18		
	91 00 U. L. . .	50 48		
	91 00 L. L. . .	53 56		
31	83 00 U. L. . .	20 31 33	0 45	
	83 00 L. L. . .	34 33		
	85 00 U. L. . .	36 44		
	85 00 L. L. . .	39 40		
	87 00 U. L. . .	41 20		
	87 00 L. L. . .	44 4		
1823 Jan. 1	94 00 U. L. . .	20 38 44	0 45	
	94 00 L. L. . .	21 1 29		
	96 00 U. L. . .	3 40		
	96 00 L. L. . .	6 20		
2	91 00 U. L. . .	20 54 50	0 45	
	91 00 L. L. . .	54 10		
	93 00 U. L. . .	56 51		
	93 00 L. L. . .	59 33		
3	90 00 U. L. . .	20 50 12	0 50	
	90 00 L. L. . .	52 50		
	92 00 U. L. . .	54 58		
	92 00 L. L. . .	57 39		
4	82 57 00 U. L. .	20 34 4	0 60	
	83 59 30 U. L. .	36 27		
	84 52 30 U. L. .	38 37		
5	80 42 30 U. L. .	20 34 3	0 60	
	83 42 5 U. L. .	36 21		
	84 27 30 U. L. .	38 10		
	85 6 15 U. L. .	39 30		
8	82 41 45 U. L. .	20 35 24	0 60	
	83 20 30 U. L. .	36 49		
10	85 35 45 U. L. .	20 47 8	0 15	

1823 Month.	Double Altitudes of the Sun.	Times by Chronometer Eureka.	Error of Second.	Remarks.
	° ′	h. ′ ″	″_″	
Jan. 25	85 20 30 U. L.	49 1		
	87 12 00 U. L.	50 48		
27	94 55 00 U. L.	21 7 29	0 15	
	95 35 00 U. L.	9 16		
	96 2 00 U. L.	19 48		
28	177 1 30 U. L.	59 16 45	0 15	
	181 41 30 U. L.	14 28		
	183 16 00 U. L.	16 19		

1823 Month.	Double Altitudes of the Sun.		Times by Clock.		Comparison of the Chronometers.			Remarks.
			h.	′ ″		h.	′ ″	
Feb. 10	110 00 U. L.	Forenoon.	10	12 38,5	Clock.	12	18 00	
	118 00 L. L.			15 18	Eure.	11	56 44	
	118 00 U. L.			17 18		00	21 16	
	118 00 L. L.			19 38,5				
	120 00 U. L.			21 53,5				
	120 00 L. L.			23 57,5				
	122 00 U. L.			25 57				
	122 00 L. L.			28 18				
	118 00 L. L.	Afternoon.	2	13 41	Clock.	12	19 00	
	116 00 U. L.			13 15	No. 204.	9	54 5	
	118 00 L. L.			11 35		2	14 55	
	118 00 U. L.			8 38,5				
	120 00 L. L.			6 31,5				
	120 00 U. L.			4 29				
	122 00 L. L.			2 21,5				
	122 00 U. L.			00 0,5				
20	117 00 U. L.	1.	10	14 27	Clock.	12	18 00	
	117 00 L. L.	2.		16 47	Eure.	11	57 1	
	119 00 U. L.	3.		19 08		00	20 59	
	119 00 L. L.	4.		21 8				
	117 00 L. L.	1.	2	13 49,5	Clock.	12	19 00	
	117 00 U. L.	2.		11 20,5	No. 208.	9	58 33,5	
	119 00 L. L.	3.		9 30		2	15 4,5	
	119 00 U. L.	4.		7 9				
March 1	120 00 U. L.	Forenoon.	10	13 58	Clock.	12	17 00	
	123 00 L. L.			16 4,75	Eure.	11	00 17,25	
	122 00 U. L.			18 1,5		00	16 42,75	
	122 00 L. L.			20 15,75				
	120 00 U. L.			22 11,25				
	120 00 L. L.			24 28				
	120 00 L. L.	Afternoon.	2	8 33,75	Clock.	12	18 00	
	120 00 U. L.			6 19	No. 201.	9	59 53	
	118 00 L. L.			4 14,75		2	18 7	
	122 00 U. L.			2 09				
	122 00 L. L.			00 3,75				
	123 00 U. L.		1	57 43,25				

1823 Month.	Double Altitudes of the Sun.		Times by the Clock.	Comparison of the Chronometers with the Clock.	Remarks.
			h. ′ ″	h. ′ ″	
March 3	120 00 U. L.	Forenoon	10 18 47	Clock. 12 17 00	
	120 00 L. L.		14 59,25	Earn. 12 00 59	
	122 00 U. L.		18 53,5	00 16 1	
	122 00 L. L.		19 17,5		
	124 00 U. L.		21 2,5		
	124 00 L. L.		22 17,5		
	120 00 L. L.	Afternoon	2 8 30	Clock. 12 18 00	
	120 00 U. L.		6 27	No. 251. 9 52 30	
	122 00 L. L.		4 31,75	2 25 30	
	122 00 U. L.		8 10		
	124 00 L. L.		09 22,5		
	124 00 U. L.		1 58 12,75		

1823 Month.	Double Altitudes of the Sun.	Times by the Clock.	Error of Sextant.	Comparison of the Chronometers with the Clock.	Remarks.
	′ ″	h. ′ ″	′ ″	h. ′ ″	
				Clock. 12 16 00	
March 5	126 00 U. L. . .	22 25 22	+0 25,6	Earn. 12 18 0,75	
				00 2 0,75	
	128 00 L. L. . .	27 34		Clock. 12 17 00	
				No. 251. 8 7 26,5	
				4 9 29,5	
9	123 00 U. L. . .	22 11 42,5	0 25,6	Clock. 12 18 00	
	123 00 L. L. . .	55 52		Earn. 12 20 26	
	125 00 U. L. . .	18 45,5		00 2 26	
	125 00 L. L. . .	40 57		Clock. 12 19 00	
	127 00 U. L. . .	22 49		No. 251. 8 9 8,25	
	127 00 L. L. . .	25 10		4 9 32,25	
10	125 00 U. L. . .	22 17 49	0 25,6	Clock. 12 14 00	
	125 00 L. L. . .	20 2		Earn. 12 27 6,25	
	127 00 U. L. . .	20 54,5		00 3 6,25	
	127 00 L. L. . .	14 4,5		Clock. 12 25 00	
				No. 251. 8 15 20	
				4 9 40	
11	123 00 U. L. . .	22 13 18	0 2,5	Clock. 12 11 00	
	123 00 L. L. . .	19 31		Earn. 12 14 31,25	
	123 00 U. L. . .	17 22		00 3 31,25	
	125 00 L. L. . .	19 32,5		Clock. 12 12 00	
	127 00 U. L. . .	21 29		No. 251. 8 2 11	
	127 00 L. L. . .	23 35,75		4 9 49	
12	123 00 U. L. . .	22 12 52	2 2,5	Clock. 12 6 00	
	123 00 L. L. . .	15 00,5		Earn. 12 0 50	
	125 00 U. L. . .	16 33		00 3 50	
	125 00 L. L. . .	19 6		Clock. 12 7 00	
	127 00 U. L. . .	20 57,25		No. 251. 8 56 55	
	127 00 L. L. . .	23 8		4 19 5	

1809 Month.	Double Altitudes of the Sun.	Times by the Clock.	Error of Pendul.	Comparison of the Chronometers with the Clock.	Remarks.
	° ′	h. ′ ″	″	h. ′ ″	
Mar. 13	173 00 U. L. . .	21 19 25	+0 8,5	Clock. 13 22 00	
	103 00 L. L. . .	14 32		Exon. 19 25 55,75	
	123 00 U. L. . .	16 20,5		00 3 55,75	
	105 00 L. L. . .	19 27,25		Clock. 19 23 00	
	177 00 U. L. . .	22 30,5		No. 201. 3 19 43	
	107 00 L. L. . .	22 50		4 19 17	
15	100 00 L. L. . .	2 17 10,5	0 8,5	Clock. 19 1 00	
	109 00 U. L. . .	20 30		Exon. 19 5 19	
	107 00 L. L. . .	21 05		00 4 19	
	107 00 U. L. . .	23 20,5		Clock. 17 2 00	
	100 00 L. L. . .	25 50		No. 201. 7 55 31,5	
	105 00 U. L. . .	27 33,75		4 19 28,5	
15	105 00 U. L. . .	09 18 39,5	0 8,5	Clock. 17 24 00	
	104 00 L. L. . .	13 47		Exon. 18 58 40,5	
	106 00 U. L. . .	17 28		00 4 40,5	
	102 00 L. L. . .	19 47,5		Clock. 17 15 00	
	103 00 U. L. . .	21 29,5		No. 201. 8 14 21	
	100 00 L. L. . .	23 48		4 19 39	
				Clock. 18 1 00	
				Exon. 18 5 39,5	
16	105 00 U. L. . .	21 18 55	0 8,5	00 5 39,5	
	105 00 L. L. . .	23 1,5		Clock. 19 0 00	
				No. 201. 7 51 39,75	
				4 19 21,25	
17	98 00 L. L. . .	2 15 00	0 8,5	Clock. 19 1 00	
	94 00 U. L. . .	16 23		Exon. 19 5 43	
	95 00 L. L. . .	17 00		00 3 43	
	86 00 U. L. . .	14 29		Clock. 18 0 00	
	84 00 L. L. . .	16 15,5		No. 201. 7 51 21	
	84 00 U. L. . .	18 29		4 19 39	
18	93 00 U. L. . .	21 14 0,75	0 8,5	Clock. 19 15 00	
	105 00 L. L. . .	16 14,5		Exon. 19 19 2,25	
	107 00 U. L. . .	18 0		00 4 2,25	
	127 00 L. L. . .	20 17,0		Clock. 18 14 00	
				No. 201. 8 3 8,25	
				4 10 51,75	
20	114 00 L. L. . .	2 15 45,5	0 8,5	Clock. 11 2 00	
	114 00 U. L. . .	17 14,75		Exon. 18 5 45,5	
	122 00 L. L. . .	19 43		00 3 45,5	
	112 00 U. L. . .	21 34		Clock. 19 3 00	
	109 00 L. L. . .	23 45,5		No. 201. 7 51 37,25	
	110 00 U. L. . .	25 34,75		4 21 2,75	
		Clock slow Accm.			
		Error.		Exon. 19 5 00	
21	81 00 L. L. . .	2 5 14	0 8,5	No. 201. 7 47 9	
	84 00 U. L. . .	19 24		4 17 39	
	99 00 L. L. . .	22 11			
	80 00 U. L. . .	14 32			

1822 Month.	Double Altitudes of the Sun.	Times by Chronometer *Earnshaw*.	Error of Sextant.	Comparison of the Chronometers with *Earnshaw*.	Remarks.
	° ′	h. ′ ″	′ ″	h. ′ ″	
Mar. 22	80 00 L. L. . .	3 12 10,5		*Earn.* 12 9 00	
	88 00 L. L. . .	18 11		No. 251. 7 50 51	
	87 00 L. L. . .	16 0,5		4 18 29	

For the Variation of the Compass

by Amplitudes, Azimuths and True Bearings of the Sun.

1st.

1822 Month.		Times by Chronometer *Earnshaw*.	Magnetic Bearings of the Sun, by the Azimuth Compass.	Remarks.
		h. ′ ″	°	
December	25	5 26	S. 61½ W. L. L. . . .	Sun set.
	26	5 28	S. 61½ W. L. L. . . .	Sun set.
	27	5 29	S. 63 W. Centre . .	Sun set.
	28	5 30	S. 63 5 W. Centre . .	Sun set.
	29	5 30 30	S. 61½ W. Centre . .	Sun set.
1823 January	1	5 31	S. 63 25 W. Centre . .	Sun set.
	2	5 31	S. 64 30 W. Centre . .	Sun set.
	3	5 33	S. 65 15 W. Centre . .	Sun set.

2d.

1823 Month.		Times by Chronometer *Earnshaw*.	Sun's Altitude.	Error of Sextant.	Magnetic Bearings of the Sun by the Compass.	Remarks.
		h. ′ ″	° ′ ″	′ ″	°	
Jan.	3	8 25 37	1 7 25 L. L.	0 43	S. 65½ W. Centre . .	Height of the Eye. F. 5.
	4	8 40 44	10 13 30 L. L.	0 43	S. 65½ W. Centre . .	
	5	8 6 8	5 56 00 Centre	0 40	S. 65½ W. Centre . .	

3d.

1823 Month.		Times by Chronometer *Earnshaw*.	Distance of the Sun's near Limb and Twelfth-Hammer Peak.	Error of Sextant.	Magnetic Bearings of the Peak by the Compass.	Remarks.
		h. ′ ″	° ′ ″	′ ″	° ′	
Jan.	8	17 41 37	14 47 30			Peak marked (a) in the Sketch.
		42 54	19 45	0 40	N. 55 45 E.	
		44 35	16 25			
	10	17 45 15	32 17 00	0 30	N. 55 45 E.	

Rise and Fall of the Tide
at the Full and Change of the Moon;
At Pulo Cavenne Light, in February 1823.

Hour of the Day.	Last Quarter Feb. 3, at 5h 1. m.		New Moon, Feb. 11, at 9h 1. m.		First Quarter, Feb. 18, at 5h 1. m.		Full Moon, Feb. 25, at 11h 1. m.	
h.	F.	In.	F.	In.	F.	In.	F.	In.
6 a. m.	1	9	4	5	2	10	5	6
7	3	0	5	0	3	10	5	9
8	3	6½	4	6	4	5	4	6
9	4	1½	3	9	5	0	3	8
10	5	0	3	2	6	0	2	0
11	4	7	2	6	7	0	2	0
12	4	3	2	0	5	0	2	3
1 p. m.	4	0	2	4	4	7	2	6
2	3	10	3	3	3	6	3	3
3	3	3	4	6	3	0	4	6
4	2	10	4	8	2	6	6	3
5	2	9	6	4	2	3	6	9
6	2	11	6	9	2	10	8	3

ECLIPSES of the SATELLITES of JUPITER.

Month.		Place of Observation.	Observer.	Satellite.	Immersion or Emersion.	Times by Chronometer.				Remarks.
						h.	′	″		
1922										
September	8	Tuppenoody	C. & L.	1	Imm.	12	47	23	287	Planet clear and sufficiently high—Observation good.
November	9	Pulo Penjang	L.	1	Imm.	11	27	45	281	Planet high—Observation not satisfactory, from the Satellite disappearing very near the Body of Jupiter.
	18	"	L.	1	Imm.	9	44	36	287	Planet high—Atmosphere clear—Observation tolerably good.
December	20	Pulo Pinang	R.	1	Em.	8	2	32	Earn.	Planet at a convenient Altitude—Moonlight—Atmosphere clear—Observation good.
1923										
January	3	Pulo Gunung Lont	L.	1	Em.	11	35	30	"	Planet clear—Eclipse observed with ease—Observation good.
	9	"	L.	2	Em.	7	55	27	"	Planet high—Atmosphere clear—Observation good.
		"	R.	"	"	7	56	20	"	
	28	"	L.	1	Em.	6	40	58	"	Planet high—but the Telescope unsteady owing to wind.—Observation otherwise good.
		"	R.	"	"	6	47	10	"	
February	17	"	L.	2	Em.	10	08	30	"	Planet clear—Observation good.
	20	"	L.	1	Em.	7	10	25	"	Planet at a convenient Altitude—Atmosphere clear—Observation good.
		"	R.	"	"	7	15	30	"	
March	3	"	L.	2	Em.	6	23	55	"	Planet at a convenient Altitude—Atmosphere covered with a thin haze—Observation otherwise good.
		"	R.	"	"	6	24	21	"	
	10	"	R.	2	Imm.	8	15	50	"	Planet low but clear—Observation good.
		"	L.	"	"	8	16	53	"	
	14	"	L.	2	Em.	7	26	10	"	Planet at a convenient Altitude—Atmosphere somewhat hazy—Observation good.*

N. B.—The Eclipses by *Lestrange* were Observed with a 4½ feet Achromatic Telescope by Dollond—Magnifying Power 70;—Those by *Robinson* with a 2½ feet Telescope—Magnifying Power about 10.

The Integrity on all the Observations, from which the Conclusions will be drawn; these I have endeavoured should be arranged in as clear a manner as possible; in order that any person, so disposed, may be enabled to examine the Foundation on which the Conclusions rest—and to go over the Calculations.

We now proceed to the *Computation of the Experiments and Observations*. The *Results only* of the different Operations, are contained in the Tables which follow: for the performance of these Operations The Honorable The Governor in Council was pleased to allow me a continuance of the aid of the two Observers, *Robinson* and *Lawrence*—The Rules for reducing the Experiments having been furnished them step by step, as they proceeded—each calculating the Experiments and Observations himself had made—and the Results were not entered, until the Operations had been twice gone over, and then examined—the Details of the Calculations are of course not inserted, as these alone would occupy a very large Volume. The Calculations for finding the Specific Gravity of the Pendulum, for the Correction on account of the Buoyancy of the Atmosphere, for the Height of the Pendulum above the level of the Sea, for finding the Length of the Pendulum at the Equator, and for the Ellipticity, have also been gone over by *E. Lake*, Esq. of the *Madras Engineers*—who was so good to undertake this service; and as in size and difficult Computations of this nature, the more Calculators there are independent of each other, the better, I was much obliged and I may add gratified, by his having done so.

I have commenced with the *Pendulum Experiments* as being the most important—the first Table shows the *Rate of the Clock* while those Experiments were making—the time which is used in the Deductions. The Series of each Observer I have divided into four Sets—between the second and third Sets, the Apparatus was purposely put completely out of adjustment, and set right again—between the other Sets, the Apparatus was examined from time to time, and any trifling adjustment made that was required.

RATE OF THE CLOCK

used in the Computation of the

Pendulum Experiments.

1823 Month.	Times by the Clock. Forenoon.	Afternoon.	Mean.	Equation of Equal Altitudes.	Apparent Noon by the Clock.	Equation of Time.	Mean Noon by the Clock.	Clock Slow or Fast for Mean Time. Clock Slow.	Rate in 24 hours.
	h. ′ ″	h. ′ ″	h. ′ ″	″	h. ′ ″	″ — ″	h. ′ ″	h. ′ ″	″
Feb. 14	9 42 12,0	2 45 56,25	12 14 24,13	— 2,50	12 14 26,63	14 32,87	11 59 58,70	0 00 01,24	
15	9 39 27,83	2 50 35,75	12 14 31,79	2,54	12 14 29,15	14 30,64	11 59 58,69	0 00 01,32	— 00,27
16	9 40 50,57	2 38 07,53	12 14 29	2,58	12 14 26,48	14 27,08	11 59 58,80	0 00 01,20	+ 00,31
18	9 35 11,27	2 39 28,75	12 14 20,00	2,59	12 14 17,77	14 19,49	11 59 58,28	0 00 01,72	— 00,96
19	9 40 39,08	2 47 49,75	12 14 14,42	2,41	12 14 12,00	14 14,36	11 59 57,64	0 00 02,36	00,64
20	9 35 16,98	2 52 59,08	12 14 07,74	2,29	12 14 03,51	14 08,43	11 59 57,08	0 00 02,92	00,56
21	9 39 09,50	2 47 00,33	12 13 05,00	2,17	12 13 02,83	14 01,87	11 59 00,96	0 00 59,04	*Clock wound up in the afternoon.*
22	9 33 27,50	2 50 28,25	12 12 57,97	2,05	12 12 55,01	13 54,56	11 59 01,35	0 00 58,65	+ 00,39
23	9 33 00,31	2 52 38,25	12 12 49,28	2,19	12 12 47,16	13 46,30	11 59 00,46	0 00 59,54	00,89
24	9 32 31,19	2 50 47,75	12 12 39,25	2,02	12 12 37,24	13 38,32	11 58 59,32	0 01 00,88	01,24
25	10 27 13,33	1 47 45,25	12 12 29,29	1,94	12 12 27,35	13 29,56	11 58 58,39	0 01 01,61	00,73
26	9 33 39,25	2 50 38,12	12 12 18,62	1,83	12 12 16,80	13 19,92	11 58 57,04	0 01 02,36	00,75
27	9 32 32,56	2 50 24,10	12 11 29,38	1,80	12 11 27,58	13 08,89	11 58 18,09	0 01 41,31	*Clock wound up in the afternoon.*
March 1	9 33 41,86	2 48 31,50	12 11 06,72	1,67	12 11 05,04	12 46,59	11 58 18,46	0 01 41,54	— 01,12
3	9 28 44,50	2 52 42,10	12 10 43,31	1,48	12 10 41,83	12 29,37	11 58 19,56	0 01 40,44	+ 00,33

1823	Times by the Clock.			Equation of Equal Altitudes.	Apparent Noon by the Clock.	Equation of Time.	Mean Noon by the Clock.	Clock Slower Fast for Mean Time.	Rate in 24 hours.
Month.	Forenoon.	Afternoon.	Mean.					Clock Slow.	
	h. ′ ″	h. ′ ″	h. ′ ″	″	h. ′ ″	″ — ″	h. ′ ″	h. ′ ″	″
March 4	9 21 41,73	9 49 26,43	12 10 30,11	— 1,42	12 10 28,69	12 49,38	11 56 39,31	0 01 40,69	— 00,25
8	9 26 08,31	9 51 37,94	12 09 00,13	1,13	12 09 00	11 55,67	11 57 46,28	0 02 13,02	Clock wound up in the afternoon.
9	9 23 40,60	9 51 30,44	12 08 40,57	0,97	12 08 43,6	10 58,64	11 57 46,25	0 02 13,03	+ 00,57
10	9 25 53,56	9 41 09,67	12 08 21,61	0,89	12 08 20,72	10 42,41	11 57 46,31	0 02 13,09	— 00,61
11	9 26 27,06	9 49 11,37	12 07 49,37	0,93	12 07 48,44	10 27,75	11 57 20,69	0 02 39,31	Clock wound up in the afternoon.
12	9 28 01,85	9 47 01,84	12 07 33,28	0,69	12 07 29,09	10 11,80	11 57 20,89	0 02 39,11	+ 00,20
13	9 23 40,56	9 50 57,87	12 07 47,21	0,66	12 07 16,55	09 55,35	11 57 21,94	0 02 38,06	00,15
14	9 25 17,93	9 50 43,87	12 07 00,90	0,55	12 07 00,35	09 38,97	11 57 21,38	0 02 38,62	00,34
16	9 31 07,75	9 31 44,60	12 06 26,22	0,42	12 06 25,8	09 05,02	11 57 19,78	0 02 39,22	— 00,30
17	9 23 51,33	9 47 42,39	12 05 46,70	0,41	12 05 46,35	08 47,69	11 56 58,66	0 03 01,34	Clock wound up in the afternoon.
18	9 34 29,95	9 16 25,88	12 05 08,11	0,41	12 05 27,7	08 30,14	11 56 57,56	0 03 02,44	— 01,12
19	9 19 08,02	9 51 00,83	12 05 09,08	0,32	12 05 08,76	08 12,32	11 56 56,44	0 03 03,56	01,12
20	9 18 48,73	9 50 52,69	12 04 50,72	0,31	12 04 50,41	07 54,55	11 56 56,06	0 03 03,94	00,38

For the LENGTH of the PENDULUM.

First Set.

1815. 15th January A.M.

Rate of the Clock −8,07. Hygrometer 8 merid. Barometer 30,118 Inches.

Temp.	Time of coincidence.	Arc of Vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Corrections for Arc +	Corrections for Temperature +	Vibrations in 24 hours.
91,5	h. m. s. 19 20 10	1,200							
	19 59 01,5	1,170	1,735	883,5	905,5	86139,55	1,340	8,070	86137,008
			1,335	894,5	892,5	86151,18	0,780	5,198	86139,304
92,5	19 21 56	1,135	1,290	895,35	896,35	86138,34	1,011	5,775	86130,913
	19 43 14,35	1,080	1,815	900,10	901,0	86151,79	1,580	5,050	86139,052
93,5	19 34 30,85	0,760							
89,3						Mean			86139,114
						Rate of the Clock . . .			— 0,07
						Vibrations in 24 hours . .			86138,814

Hygrometer 9 deg. Barometer 30,115

88	11 01 30	1,220	1,897	897,21	898,21	86150,09	0,736	6,134	86158,909
	11 23 02,45	1,09	1,871	898,35	897,75	86139,47	0,859	6,537	86138,406
89	11 44 32	1,175	1,197	899,51	897,75	86139,87	0,962	7,059	86159,585
	11 26 08,75	1,080	1,865	897,85	899,50	86148,36	1,580	7,501	86157,349
89,5	11 47 38	1,070							
89,17						Mean			86139,960
						Rate of the Clock . . .			— 0,07
						Vibrations in 24 hours . .			86139,190

Hygrometer 28 deg. Barometer 30,103

91	1 10 08,75	1,098	1,254	878,35	874,75	86141,87	2,377	18,892	86137,349
	1 31 26,5	1,010	1,178	877,5	875,5	86141,94	2,213	17,311	86137,034
91,5	1 52 12	1,110	1,085	879,9	877,9	86143,31	1,948	16,268	86137,030
	2 30 01	1,060	1,012	875,5	876,5	86143,27	1,950	18,264	86137,280
91,5	2 50 15,5	0,935							
91,22						Mean			86137,431
						Rate of the Clock . . .			— 0,07
						Vibrations in 24 hours . .			86137,355

Hygrometer 28,5 deg. Barometer 30,108

92	3 0 41,5	1,030	1,050	881,3	879,5	86140,84	2,099	9,665	86138,995
	3 22 04	1,130	1,115	880,9	880,5	86140,81	2,055	8,830	86137,793
90,5	3 44 06,5	1,000	1,047,5	880,3	880,5	86137,98	1,776	8,400	86138,178
	4 05 11	1,015	0,980	881,3	881,5	86139,56	1,582	8,007	86138,980
88,5	4 07 18,5	0,950							
90,81						Mean			86138,118
						Rate of the Clock . . .			— 0,07
						Vibrations in 24 hours . .			86138,041

16th February 1-8.

Rate of Clock + 0,51 — Hygrometer 0,5 deg. — Barometer 29,185

Temp.	Time of Coincidence.	Arc of Vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″						+	+	
82,00	7 43 00	1,250	1,2375	600,0	600,5	86151,35	0,991	1,070	86153,872
	7 54 35,5	1,220							
82,00	8 06 13,5	1,13	1,180	600,0	600,0	86151,77	0,931	1,008	86153,697
	8 17 44,5	1,07	1,11	597,60	600,56	86158,17	0,919	1,089	86161,218
80,5	8 29 35	0,965	1,0075	595,25	604,35	86153,87	1,750	1,755	86158,775
80,17						Mean			86160,390
						Rate of the Clock ...			+ 0,51
						Vibrations in 24 hours ...			86160,912

Hygrometer 19,5 deg. — Barometer 29,188

84	10 33 10,25	1,235	1,1805	603,75	601,75	86161,89	0,953	0,996	86163,839
	10 44 50	1,126							
83	10 56 29	1,010	1,005	599,0	598,8	86156,07	1,001	0,959	86158,019
	11 07 36,85	0,900	0,939	600,65	599,55	86155,71	1,758	0,837	86158,295
82	11 19 32,75	0,977	0,9385	601,5	600,5	86159,11	1,839	0,900	86161,849
83,33						Mean			86159,762
						Rate of the Clock ...			+ 0,51
						Vibrations in 24 hours ...			86160,273

Hygrometer 21,5 deg. — Barometer 29,198

87	11 54 19	1,034	1,0045	598,75	598,75	86149,81	0,849	7,581	86158,909
	12 05 14,75	1,175							
86,5	12 17 29,5	1,055	1,055	599,75	599,75	86147,91	0,771	8,201	86156,883
	12 28 01	1,055	1,0005	599,50	599,50	86147,31	0,841	8,707	86156,858
85,5	12 40 23,5	0,949	0,9965	600,5	600,5	86140,81	1,367	8,693	86150,870
86,33						Mean			86151,879
						Rate of the Clock ...			+ 0,51
						Vibrations in 24 hours ...			86152,389

Hygrometer 43 deg. — Barometer 29,198

96	1 09 39,5	1,02	0,996	675	678	86148	1,022	10,592	86159,615
	1 21 09,5	0,96							
97	1 32 59	0,905	0,9325	677,5	675,5	86148,91	1,004	11,913	86161,849
	1 43 45,5	0,905	0,905	677,5	675,5	86144,91	1,008	11,474	86157,878
97,5	1 55 03,5	0,785	0,799	675	678	86145,15	1,081	11,560	86157,733
99,83						Mean			86157,207
						Rate of the Clock ...			+ 0,51
						Vibrations in 24 hours ...			86157,697

16th February.

Hygrometer 48 deg. Barometer *Toises.* 28,134

Temp.	Time of commencement.	Arc of oscillation.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc. −	Correction for Temperature. +	Vibrations in 24 hours.
	h. ′ ″		°	″					
84,5	2 36 39,5	1,859							
	2 47 44,25	1,193	1,1035	679,75	637,75	86048,79	2,914	5,041	86137,915
83,5	3 59 06	1,050	1,0615	683,75	641,75	86167,38	2,838	5,115	86239,283
	4 10 38,5	0,98	1,014	686,5	644,5	86239,29	2,689	5,113	86338,891
83	4 22 06,25	0,914	0,9475	688,75	646,75	86248,01	2,471	5,250	86347,877
83,33						Mean			86138,237
						Rate of the Clock ...			+ 0,31
						Vibrations in 24 hours ..			86139,919

25th February a. s.
Rate of the Clock—0,93. Hygrometer 2 deg. Barometer 27,151

80,75	6 55 21,5	1,19							
	7 07 11,0	0,713	1,1025	720,00	695,0	86138,14	2,759	4,587	86138,563
80,75	7 18 53	1,054	1,0025	721,5	693,5	86132,87	2,682	4,847	86180,140
	7 29 52,5	0,960	0,9925	721,5	693,5	86132,87	2,630	4,709	86180,039
80,5	7 40 17,75	0,950	0,985	725,25	701,25	86231,78	2,602	4,668	86180,130
						Mean			86157,028
						Rate of the Clock ...			— 0,93
						Vibrations in 24 hours ..			86156,019

Hygrometer 7 deg. Barometer 26,174

81,3	9 30 07,5	1,253							
	10 07 10,75	1,143	1,150	697,25	693,25	86134,17	2,370	5,240	86150,930
83	10 19 18	1,07	1,1075	697,25	693,25	86150,17	2,010	5,140	86139,030
	10 30 53	0,98	1,025	697,0	693,0	86137,05	1,741	5,138	86150,352
83,5	10 42 33	0,903	0,9525	699	695	86150,14	1,555	5,038	86150,523
82						Mean			86138,981
						Rate of the Clock ..			— 93
						Vibrations in 24 hours..			86138,231

Hygrometer 11,5 deg. Barometer 26,175

84,5	10 58 16	1,150	1,105	695	688	86131,37	2,329	5,559	86136,595
84,25	11 09 51	1,061	1,0575	693,75	691,75	86150,50	1,852	5,355	86154,008
84,5	11 21 01,75	1,09	0,995	693,75	691,75	86150,50	1,560	5,230	86154,930
84	11 32 26,5	0,95	0,918	698	696,5	86150,95	1,458	5,269	86154,975
83	11 39 51,5	0,858							
83,31						Mean			86150,914
						Rate of the Clock ..			— 7,93
						Vibrations in 24 hours.			86143,184

Temp.	Time of commencement.	Arc of Vibration.	Mean Arc.	Interval in seconds.	Number of Vibrations.	Observed retardation in 24 hours.	Correction for Arc	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″						+	+	
93,5	12 56 34	1,855	0,8915	678,75	637,75	86143,79	1,830	18,040	86157,896
94	1 10 13,75	0,888	0,885	668	679,0	86143,68	1,807	18,[illegible]	86157,349
94,5	1 21 55,25	0,880	0,876	678,75	670,25	86143,93	1,784	18,[illegible]	86156,887
94	1 33 58	0,868	0,8615	680,00	663,0	86142,63	1,760	18,[illegible]	86157,897
94	1 44 18	0,743							
93,83							Mean		86157,471
							Rate of the Clock ...		— 0,35
							Vibrations in 24 hours ..		86157,014

Hygrometer 10 deg. Barometer 30,108

86,5	3 29 25	1,710	1,595	670	659	86150,00	1,891	6,874	86158,980
86	3 33 57	1,699	0,985	666,75	665,75	86149,84	1,890	6,868	86158,158
86	3 43 37,75	0,91	0,9115	670	664	86151,72	1,864	6,868	86160,784
85,5	3 57 30,75	0,923	0,9245	653,33	683,25	86151,18	1,168	6,837	86159,180
85,5	4 08 39	0,91							
85,9							Mean		86159,023
							Rate of the Clock ...		— 0,39
							Vibrations in 24 hours ..		86158,773

Dish *February* 2. N.
Rate of the Clock —0,98. Hygrometer 8 deg. Barometer 30,155

75,5	7 46 37,25	1,08	1,04	690,25	697,25	86138,69	9,529	4,566	86128,585
80	7 58 09,5	1,10	1,0925	700	686,00	86139,14	9,814	4,550	86129,080
80,5	8 09 45,5	1,105	1,0925	701,25	686,75	86139,58	1,817	4,442	86130,059
80,5	8 21 30,75	1,05	1,050	701,25	685,75	86140,56	1,671	4,454	86130,585
80,25	8 33 13,5	0,87							
80,05							Mean		86130,574
							Rate of the Clock ...		— 0,39
							Vibrations in 24 hours		86130,134

Hygrometer 10 deg. Barometer 30,153

88	9 46 03	1,360	1,38	697,5	695,5	86130,89	7,555	3,070	86,08,191
88	9 59 40,5	1,390	1,395	690,00	694,00	86131,41	2,499	3,050	86130,385
88	10 11 16,25	1,39	1,3905	696,25	694,25	86131,97	2,129	3,182	86128,277
88,5	10 22 52,5	1,395	1,397	696,0	697,0	86132,39	1,838	3,320	86130,952
88,7	10 34 30,5	1,390							
88,04							Mean		86130,718
							Rate of the Clock ...		— 0,39
							Vibrations in 24 hours ..		86130,439

1804 *February* 2. 2.

Hygrometer 36 deg. Barometer 30,134 *Inches.*

Temp.	Time of commencement.	Arc of Vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc	Correction for Temperature	Vibrations in 24 hours.
	h. ′ ″						+	+	
65,5	11 48 00	1,50	1,345	684	888	86047,27	9,540	8,143	86135,073
66	11 59 44	1,40	1,160	681,5	879,5	86050,44	9,022	8,998	86137,863
66,5	12 11 02,5	1,19	1,090	681,5	881,5	86047,29	8,911	8,729	86134,930
65,5	12 22 49	1,04	1,005	679,75	877,75	86045,70	1,853	10,585	86137,491
66	12 33 45,75	0,97							
65,7						Mean			86136,047
						Rate of the Clock . . .			— 0,50
						Vibrations in 24 hours . .			86137,597

Hygrometer 47 deg. Barometer 30,125

66	1 45 46	1,175	1,1305	675,75	873,25	86048,08	8,100	21,810	86137,388
67	2 02 01,25	1,09	1,0545	676,5	874,5	86048,57	1,855	21,881	86137,806
67	2 12 18,80	1,015	0,9975	677	875,0	86044,20	1,686	21,899	86137,205
66,5	2 23 33,53	0,940	0,905	678,75	876,53	86043,61	1,548	21,896	86136,059
66,5	2 34 34	0,87							
66,71						Mean			86137,730
						Rate of the Clock . . .			— 0,50
						Vibrations in 24 hours . .			86137,208

Hygrometer 43,5 deg. Barometer 30,098

65	4 01 24,05	1,07	1,0505	679,75	877,25	86048,78	8,109	10,462	86136,749
64,5	4 12 33,75	1,00	1,1305	680,5	878,5	86046,07	8,176	10,256	86134,504
64	4 23 34,05	1,11	1,0705	680,5	878,5	86046,07	1,693	10,079	86134,054
63,75	4 35 34,75	1,035	0,9915	680,75	881,25	86047,09	1,650	9,995	86136,795
63	4 46 59,1	0,96							
64,5						Mean			86135,500
						Rate of the Clock . . .			— 0,50
						Vibrations in 24 hours . .			86136,000

19th *February* A. M.

Rate of the Clock — 0,58. Hygrometer 52 deg. Barometer 30,110

61,5	7 28 46	1,350	1,2705	676,5	875,5	86048,61	8,088	8,863	86307,079
61,5	7 39 58,5	1,275	1,221	677	877	86050,70	8,079	8,863	86308,138
61,5	7 51 03,5	1,250	1,1975	677	877	86050,70	8,105	8,847	86309,689
61,75	8 02 05,5	1,18	1,09	676,75	875,25	86048,70	1,811	3,073	86309,638
62	8 12 59,10	1,04							
61,63						Mean			86308,793
						Rate of the Clock . . .			— 0,58
						Vibrations in 24 hours . .			86308,135

1808 *February a. s.*

Hygrometer 17,5 deg. Barometer 29,155 *Inches.*

Temp.	Time of coincidence.	Arc of Vibrations.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Corrections for Arc.	Corrections for Temperature.	Vibrations in 24 hours.
	h. ′ ″	°	°	″			+	+	
69	9 59 53,05	1,30							
63,5	10 08 20,75	1,213	1,2553	698,5	698,5	86134,09	9,191	5,600	86160,096
63,5	10 16 08	1,183	1,179	699,95	699,95	86136,58	8,843	5,711	86160,434
63,5	10 23 57,75	1,158	1,0923	697,75	695,75	86138,25	8,599	5,763	86160,085
63,75	10 37 45,75	1,08	1,0000	698,95	698,95	86138,58	8,039	5,869	86160,909
64	10 39 04	0,96							
63,55						Mean			86160,153
						Rate of the Clock ...			— 0,84
						Vibrations in 24 hours ...			86159,303

Hygrometer 19,5 deg. Barometer 29,155

90,85	11 48 50,5	1,555	1,905	684,0	682,0	86147,91	9,622	8,536	86156,528
88	11 57 14,5	1,955	1,2775	686,95	680,95	86146,78	9,972	9,089	86158,615
93,5	12 08 30,75	1,13	1,09	688,75	680,75	86146,58	1,947	10,905	86159,797
94,75	12 19 55,5	1,05	1,015	691,75	679,75	86146,58	1,666	10,629	86158,840
95,6	12 31 31,25	0,96							
90,7						Mean			86156,945
						Rate of the Clock ...			— 0,84
						Vibrations in 24 hours ...			86156,093

Hygrometer 42,5 deg. Barometer 29,155

97,5	1 37 01,75	1,013	1,255	677,5	675,5	86144,54	9,470	11,625	86159,272
97,5	1 46 44,25	1,150	1,1505	676,75	674,75	86144,60	9,178	11,509	86159,491
97,5	1 58 01	1,11	1,0975	679,5	677,5	86145,70	1,867	11,467	86159,055
97	2 11 05,5	1,005	0,9975	679,5	677,5	86145,70	1,808	11,419	86159,119
80	2 22 40	0,58							
97,04						Mean			86156,736
						Rate of the Clock ...			— 0,84
						Vibrations in 24 hours ...			86155,118

Hygrometer 50 deg. Barometer 29,155

91,5	2 38 20,5	1,003	1,0925	686,5	685,5	86147,95	9,450	9,005	86159,518
91,5	2 45 37	1,18	1,1975	685,5	683,5	86147,50	2,190	9,240	86159,105
90,25	2 57 02,5	1,055	1,0575	686,95	684,95	86147,46	1,829	9,465	86159,737
90,5	3 08 40,75	1,08	0,9925	686,95	684,95	86149,09	1,582	9,306	86160,069
91,5	3 20 18	0,945							
91,20						Mean			86159,107
						Rate of the Clock ...			— 0,84
						Vibrations in 24 hours ...			86158,267

1st February a. s.

Hygrometer 88 deg. Barometer *Inches.* 30,103

Temp.	Time of commencement.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″			″			+	+	
91,5	4 33 43,5	1,705							
85,5	4 37 38	1,45	1,5775	866,5	664,5	86148,09	0,716	8,039	86156,078
89,7	4 40 39,8	1,18	1,315	695,5	667,5	86149,05	0,419	7,971	86156,773
87,5	5 00 11	1,11	1,145	691,5	699,5	86150,11	0,308	7,501	86158,920
87,8	5 11 43	0,84	1,059	698	680,6	86150,07	1,701	7,599	86158,307
88,78						Mean			86156,853
						Rate of the Clock . . .			— 0,61
						Vibrations in 24 hours . .			86156,213

28th February a. s. *Rate of the Clock* —0,56. Hygrometer 84 deg. Barometer 30,115

91	6 51 30	1,555	1,5775	709,5	708,5	86134,09	1,936	8,039	86160,669
84	6 58 20,58	1,49	1,51	705,75	705,75	86155,15	1,789	8,037	86161,552
83	7 03 21,5	0,97	0,93	709	700,0	86153,65	1,816	8,075	86158,901
81,8	7 17 06,05	0,89	0,885	705,5	705,5	86153,07	1,799	8,790	86161,049
81,6	7 26 51,75	0,89							
81,18						Mean			86160,543
						Rate of the Clock . . .			— 0,56
						Vibrations in 24 hours .			86159,983

Hygrometer 16,5 deg. Barometer 30,189

88	9 54 07,5	1,355	1,2705	697	695	86138,08	0,737	5,055	86193,859
87,1	10 00 09,5	1,05	1,2125	694	698	86151,01	0,479	5,174	86156,193
87,0	10 17 24,5	1,175	1,12	697	695	86159,05	0,009	5,860	86000,921
84	10 09 11,5	1,080	1,0405	698,5	696,5	86158,61	1,374	6,009	86000,618
84,5	10 49 50	0,956							
85,71						Mean			86165,899
						Rate of the Clock . .			—0,56
						Vibrations in 24 hours .			86159,460

Hygrometer 87,5 deg. Barometer 30,158

84,7	10 49 55,75	1,205	1,2995	699,75	691,75	86159,09	0,895	6,400	86165,999
88,0	11 01 57,5	1,39	1,32	699,36	699,8	86150,89	0,759	7,000	86158,649
87,5	11 18 58,5	1,16	1,2175	695,5	688,5	86159,73	0,810	7,514	86158,439
86,5	11 24 30	1,075	1,0975	691,25	699,25	86150,02	1,784	8,099	86160,874
88,75	11 30 01,25	1,005							
87,92						Mean			86158,740
						Rate of the Clock . .			— 0,569
						Vibrations in 24 hours .			86153,160

20th February A. M.

Hygrometer 46 *deg.* — Inches. Barometer 30,139

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc	Correction for Temperature.	Vibrations in 24 hours
	h. ′ ″			″			+	+	
90	12 42 39,5	1,385							
			1,3125	683	681	86147	2,953	8,677	86158,023
91	12 54 02,5	1,300							
			1,95	685	683	86147,73	2,071	9,390	86159,541
92,5	12 05 27,5	1,22							
			1,175	685,75	683,75	86148,01	2,092	9,603	86159,895
93	12 16 53,25	1,13							
			1,09	682,0	680	86146,63	1,047	9,941	86158,518
94	12 28 15,25	1,03							
92,1						Mean			86159,105
						Rate of the Clock . . .			— 0,25
						Vibrations in 24 hours . .			86158,580

Hygrometer 46 *deg.* — Barometer 30,113

95,5	3 04 30,5	1,330							
			1,20	678,0	676	86145,13	2,825	10,681	86158,636
95	3 16 08,5	1,25							
			1,2125	679,5	677,5	86145,70	2,409	10,575	86158,684
95	3 27 28	1,175							
			1,1325	681,5	679,5	86146,44	2,191	10,354	86158,989
94	3 38 49,5	1,09							
			1,0525	683	681,0	86147	1,815	10,046	86158,861
93,5	3 50 12,5	1,015							
94,6						Mean			86158,771
						Rate of the Clock . . .			— 0,56
						Vibrations in 24 hours . .			86158,211

For the LENGTH of the PENDULUM.

Second Set. (L.)

Old. February 2, N.

Rate of the Clock 4-9,39 — Hygrometer 18,5 dry. — *Inches.* Barometer 30,156

Temp.	Time of commencement.	Arc of Vibrations.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″						+	+	
81	7 31 14	1,825	1,2775	960,0	899	86155,14	5,109	8,868	86169,909
81	8 09 54	1,73	1,080	960,75	898,75	86153,60	5,700	8,653	86168,750
81	8 44 34,75	1,59	1,195	961,5	899,5	86155,07	5,589	8,758	86169,760
82,5	9 22 10,55	1,15	1,11	963,75	901,75	86154,90	5,019	8,907	86168,763
81,5	9 59 00	1,07							
81,8						Mean			86167,583
						Rate of the Clock . . .			+ 9,39
						Vibrations in 24 hours . .			86161,333

Hygrometer 17 dry. — Barometer 30,163

82,5	9 40 11,5	1,855	1,88	960,5	899,5	86153,99	5,569	8,758	86168,316
82,5	9 57 55	1,935	1,1695	961,5	900,5	86154,09	5,514	8,758	86168,349
82,5	10 09 57,5	1,78	1,0555	960,75	899,75	86155,76	5,300	8,749	86169,090
82,75	10 22 13,25	1,655	0,99	961,75	900,75	86155,76	5,696	8,446	86167,919
83	10 32 01	0,865							
82,65						Mean			86161,340
						Rate of the Clock . . .			+ 9,39
						Vibrations in 24 hours . .			86661,573

Hygrometer 17,5 dry. — Barometer 30,163

85,5	11 40 09,5	1,87	1,98	960	899,0	86155,07	5,084	7,701	86168,153
89	11 51 39,5	1,93	1,35	960,75	900,75	86149,11	5,209	8,110	86163,886
87,75	12 03 09,25	1,13	1,11	960	900	86155,84	5,019	8,519	86178,978
91	12 14 20,45	1,87	1,095	961,25	901,25	86155,50	4,788	8,005	86168,338
97	12 26 58,5	0,09							
89,5						Mean			86165,614
						Rate of the Clock . . .			+ 9,39
						Vibrations in 24 hours . .			86180,004

Hygrometer 48,5 dry. — Barometer 30,143

94,5	1 34 33,95	1,87	1,2955	962,25	900,25	86160,78	9,966	9,535	86159,681
95	1 46 53,5	1,875	1,2955	958,25	898,25	86165,09	5,469	10,364	86168,512
95	1 57 13,75	1,78	1,14	961,0	899,0	86160,86	9,109	10,609	86159,617
95,25	2 08 30,75	1,19	1,0575	961,25	899,25	86160,36	1,809	10,609	86159,860
95	2 09 28	1,015							
94,55						Mean			86159,915
						Rate of the Clock . . .			+ 9,39
						Vibrations in 24 hours . .			86159,605

22d February h. m.

Hygrometer 57,5 dry. Barometer 30,003 *Inches.*

Temp.	Time of coincidence.	Arc of Vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″			″			+	+	
93,5	3 44 00	1,105							
			1,1375	690,5	690,5	86148,81	2,195	10,046	86158,051
94	3 55 44,5	1,32							
			1,08	684,5	682,5	86147,35	1,941	9,941	86159,402
93	4 07 07	1,04							
			1,005	687,5	685,5	86149,65	1,635	9,306	86159,611
91	4 18 34,5	0,97							
			0,935	690	688,0	86149,57	1,422	8,893	86159,885
91	4 30 04,5	0,90							
92,5						Mean			86158,482
						Rate of the Clock . . .			+ 0,39
						Vibrations in 24 hours . .			86158,877

Hygrometer 55 dry. Barometer 30,003

90,5	4 36 31,5	1,35							
			1,3125	698	698	86148,84	2,823	8,334	86160,017
89	4 45 49,5	1,275							
			1,0225	690,5	688,5	86149,73	2,480	7,899	86160,005
88	4 57 03	1,19							
			1,145	693	691,0	86150,07	2,168	7,433	86159,621
87	5 06 33	1,10							
			1,0625	693,75	691,75	86150,99	1,850	7,085	86159,855
86,5	5 20 26,75	1,015							
88,0						Mean			86158,893
						Rate of the Clock . . .			+ 0,39
						Vibrations in 24 hours . .			86159,283

23d February a. m.
Rate of the Clock—68,9.

Hygrometer 56,5 dry. Barometer 30,007

83,5	6 32 14	1,309							
			1,2775	701,5	699,5	86153,67	2,674	4,442	86160,786
80,5	6 43 55,5	1,23							
			1,185	702	700,0	86153,85	2,301	4,442	86160,597
80,5	6 55 27,5	1,14							
			1,095	704	702,0	86154,55	1,964	4,442	86160,950
80,5	7 07 01,5	1,05							
			1,015	703,5	701,5	86154,37	1,688	4,442	86160,500
80,5	7 19 05	0,98							
80,5						Mean			86160,719
						Rate of the Clock . . .			— 0,89
						Vibrations in 24 hours . .			86159,830

Hygrometer 60 dry. Barometer 30,153

83	9 44 12,5	1,075							
			1,0975	699	697	86152,79	2,400	5,479	86160,756
83	9 55 51,5	1,18							
			1,135	700	698	86153,14	2,111	5,499	86160,750
83	10 07 31,5	1,09							
			1,005	701	699,0	86153,69	1,789	5,935	86160,884
83,5	10 19 12,5	1,00							
			0,9025	702	700,0	86153,85	1,518	5,936	86161,184
84	10 25 54,5	0,945							
83,5						Mean			86160,894
						Rate of the Clock . . .			— 0,89
						Vibrations in 24 hours . .			86160,[illegible]

25th February s. m.

Hygrometer 21,5 *deg.* Barometer 30,153 *Inches.*

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″			″			+	+	
84	10 34 57	1,08							
			1,225	690,75	694,75	86157,39	2,498	5,804	86160,432
84,2	10 60 32,75	1,19							
			1,1425	689,25	690,25	86157,57	2,139	6,176	86160,855
85	10 58 19	1,095							
			1,0475	696,5	696,5	86152,61	1,708	6,557	86160,965
86	11 09 30,5	1,000							
			0,9025	698,5	694,5	86151,50	1,518	6,305	86160,298
87	11 21 27	0,905							
85,24								Mean	86160,062
								Rate of the Clock . . .	— 0,89
								Vibrations in 24 hours . .	86159,773

Hygrometer 40,5 *deg.* Barometer 30,113

92	12 26 55	1,24							
			1,0925	684,5	682,5	86147,55	2,737	9,412	86159,699
92,5	12 38 15,5	1,245							
			1,1975	684,75	682,75	86147,64	2,348	9,789	86159,717
93,5	12 49 44,25	1,15							
			1,1125	684,75	682,75	86146,91	2,051	10,258	86159,819
95	1 01 07	1,075							
			1,0375	683,75	682,75	86147,64	1,764	10,787	86160,191
96	1 12 21,75	1,000							
93,8								Mean	86159,706
								Rate of the Clock . . .	— 0,89
								Vibrations in 24 hours . .	86158,816

Hygrometer 54 *deg.* Barometer 30,060

95	3 08 19,75	1,21							
			1,203	679,25	677,25	86145,60	2,622	10,575	86158,797
95	3 19 39	1,22							
			1,19	681	679	86146,36	2,251	10,575	86159,116
95	3 31 08	1,14							
			1,008	680	678	86145,88	1,975	10,575	86158,430
95	3 42 40	1,036							
			1,023	684,5	682,5	86147,35	1,725	10,046	86159,381
92,5	3 53 44,5	0,99							
94,5								Mean	86158,914
								Rate of the Clock . .	—0,89
								Vibrations in 24 hours . .	86158,024

26th February s. m.
Rate of the Clock—1,34. Hygrometer 21,5 *deg.* Barometer 30,000

82	7 33 29,5	1,365							
			1,2775	701	699	86158,49	2,874	3,925	86161,307
82,5	7 45 32,5	1,23							
			1,185	702,5	700,5	86154,02	2,301	3,412	86161,735
83	7 56 53	1,14							
			1,095	704	702	86154,55	1,964	3,497	86160,012
83	8 09 27	1,05							
			1,0125	705,5	703,5	86155,07	1,680	3,497	86161,279
83	8 20 29,5	0,975							
82,72								Mean	86161,847
								Rate of the Clock . .	— 1,34
								Vibrations in 24 hours . .	86160,507

2[illegible] *February A. M.*

Hygrometer 28 *dry.* Barometer 30,155 *Pouces.*

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″			″			+	+	
83,5	9 43 45	1,273							
			1,225	700,75	698,75	86153,4	2,455	5,803	86161,658
83,75	9 55 25,75	1,173							
			1,1325	700,25	698,25	86153,29	2,101	5,810	86161,347
83,75	10 07 08	1,09							
			1,0475	701,5	699,5	86153,67	1,798	5,869	86161,337
84	10 18 47,5	1,038							
			0,965	703,5	701,5	86154,37	1,522	5,922	86161,824
84	10 30 31	0,923							
83,8								Mean	86161,492
								Rate of the Clock . . .	— 1,34
								Vibrations in 24 hours . .	86160,152

Hygrometer 29,5 *dry.* Barometer 30,101

89,75	11 20 10	1,078							
			1,028	692,5	690,5	86150,47	2,558	8,019	86161,041
91	11 32 51,5	1,107							
			1,148	693,5	691,5	86150,83	2,139	8,089	86161,078
91,5	11 44 03	1,099							
			1,047	694,5	692,5	86151,19	1,700	8,200	86162,186
92	12 25 29,5	0,958							
			0,9475	692	690	86150,69	1,471	8,200	86161,062
92	12 37 11,5	0,90							
91,25								Mean	86161,718
								Rate of the Clock . . .	— 1,34
								Vibrations in 24 hours . .	86160,378

Hygrometer 36 *dry.* Barometer 30,068

98	1 43 20,5	1,37							
			1,31	678	676	86145,13	2,812	11,848	86159,780
98	1 54 47,5	1,22							
			1,200	675,5	674,5	86144,57	2,370	11,844	86158,793
98	2 06 04	1,16							
			1,1175	680	678	86145,98	2,040	11,739	86159,064
97,5	2 17 44	1,073							
			1,0025	681	675	86146,98	1,704	11,035	86159,037
97,5	2 28 43	1,00							
97,8								Mean	86159,475
								Rate of the Clock . .	— 1,380
								Vibrations in 24 hours .	86158,135

Hygrometer 37 *dry.* Barometer 30,059

95	3 49 44	1,26							
			1,21	688,5	690,5	86142,81	2,299	10,468	86159,078
94,5	4 01 05,5	1,16							
			1,125	683	683	86147,73	2,074	10,038	86160,002
94	4 13 31,5	1,09							
			1,05	684,5	682,5	86147,55	1,806	9,941	86160,927
93	4 25 35	1,01							
			0,973	688	680	86148,84	1,557	9,518	86159,915
93	4 35 08	0,94							
93,7								Mean	86159,738
								Rate of the Clock . .	— 1,34
								Vibrations in 24 hours .	86158,398

25th *February* 1. *m.*

Hygrometer 45 deg. Barom. 30,829

Temp.	Time of commencement.	Arc of Vibrations.	Mean Arc.	Interval in seconds.	Number of Vibrations.	Observed vibrations in 24 hours.	Corrections for Arc.	Corrections for Temperature.	Vibrations in 24 hours.
	h. ′ ″						+	+	
79	8 20 40	2,50							
80	8 31 15,5	1,97	2,09	687,5	686,5	86148,63	0,001	0,561	86197,194
80	8 39 45,5	1,13	1,555	690	688	86188,37	0,501	0,017	86240,888
80	8 49 45,5	1,13	1,1255	692	690	86230,09	0,551	0,009	86279,748
87	8 58 15,5	1,023	1,085	695,5	692,5	86326,35	1,777	7,190	86405,807
80,5	9 25 51	1,065							
80,7						Mean			86268,663
						Rate of the Clock . . .			— 1,240
						Vibrations in 24 hours . .			86267,743

25th *February* 2. *m.*
Rate of the Clock—0,75 Hygrometer 43 deg. Barom. 30,883

79,5	7 40 45,5	1,13	1,400	708,5	706,5	86148,79	0,021	0,009	86201,897
79,5	7 50 25	1,25	1,205	705	703,5	86234,50	0,700	2,000	86181,978
79,5	7 55 15	1,30	1,0175	706	704,0	86155,59	0,805	3,721	86183,259
79	7 58 01	1,75	1,525	707,5	705,5	86160,59	0,111	3,007	86261,679
79	8 07 31,5	1,085							
79,7						Mean			86181,463
						Rate of the Clock . . .			— 0,750
						Vibrations in 24 hours . .			86180,713

Hygrometer 43 deg. Barom. 30,769

79,5	9 13 57,5	1,25	1,1875	708,75	708,75	86156,19	0,319	4,019	86189,319
79,5	9 27 40,25	1,105	1,053	706,75	704,75	86160,50	1,509	4,019	86161,418
79,5	9 39 35	1,054	0,9905	705,5	704,5	86155,41	1,369	4,019	86161,811
79,5	9 49 19,5	0,91	0,908	705,5	703,5	86155,76	1,319	4,071	86161,333
79,75	10 03 07	0,82							
79,55						Mean			86161,009
						Rate of the Clock . .			— 0,75
						Vibrations in 24 hours .			86160,759

Hygrometer 41 deg. Barom. 30,599

80	11 13 10	1,309	1,1555	708,5	705,5	86134,09	0,121	3,969	86181,783
80	11 27 20,5	1,03	1,245	708	699	86132,14	0,501	5,697	86251,685
80	11 39 15,5	1,46	1,2355	705,5	698,5	86133,59	0,199	5,199	86161,204
80	11 50 55	1,273	1,210	706,5	700,5	86134,09	0,013	5,199	86189,539
80	12 02 25,5	1,015							
80,0						Mean			86161,803
						Rate of the Clock . .			— 0,75
						Vibrations in 24 hours .			86161,078

24th February a. m.

Hygrometer 16 deg. Barom. 29,053

Temp.	Time of coincidences.	Arc of Vibrations.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Corrections for Arc.	Corrections for Temperature.	Vibrations in 24 hours.
	h. ′ ″			″			+	+	
65,5	1 21 03,25	1,185	1,1775	690,25	695,25	86150,28	0,379	7,103	86160,853
66,5	1 30 31,5	1,17	1,09	688,0	697,0	86150,28	1,027	7,031	86160,168
69	1 43 48,5	1,05	1,015	691	699,0	86149,02	1,006	8,149	86158,761
69,5	1 55 55,5	0,98	0,9825	693,5	691,5	86150,03	1,451	8,354	86160,839
70	2 07 09	0,905							
68,3						Mean			86160,150
						Rate of the Clock . . .			— 0,73
						Vibrations in 24 hours . .			86159,420

Hygrometer 19 deg. Barometer 30,031

69	2 14 33	1,405	1,3975	699,75	698,75	86145,11	3,019	8,500	86156,629
69,5	2 29 32,75	1,39	1,3875	695	695	86149,93	3,581	8,758	86161,819
69,75	2 37 38,75	1,375	1,3705	690,25	690,25	86150,38	3,858	8,78	86161,258
69,5	2 49 47	1,35	1,3375	688,5	687,5	86149,29	3,974	8,560	86159,909
69	3 00 46,5	1,305							
69,33						Mean			86160,908
						Rate of the Clock . . .			— 0,73
						Vibrations in 24 hours . .			86160,178

25th February a. m.
Rate of the Clock = 0,73.

Hygrometer 19 deg. Barometer 30,044

91	7 26 53	1,53	1,5175	699,5	697,5	86150,07	3,500	8,738	86160,808
91,5	7 38 34,5	1,505	1,4775	705,25	698,25	86150,83	3,674	8,917	86160,993
91,75	7 50 18,75	1,45	1,385	703	701,5	86134,19	3,201	8,033	86161,714
92	8 01 50,75	1,34	1,2975	703,5	701,5	86134,37	2,974	8,076	86161,488
92	8 13 41,25	1,265							
91,65						Mean			86161,198
						Rate of the Clock . . .			— 0,73
						Vibrations in 24 hours . .			86160,468

Hygrometer 18,5 deg. Barometer 30,048

83	9 45 31,25	1,28	1,195	701,75	699,75	86155,56	3,345	8,459	86161,759
83	9 57 16	1,11	1,0425	701,5	699,5	86158,67	2,139	8,199	86161,208
83	10 08 37,5	1,005	1,007	701	699,0	86152,49	1,803	8,241	86162,537
82,75	10 20 26,5	1,010	0,968	704,5	703,5	86156,69	1,196	8,167	86161,053
82,5	10 32 01	0,925							
82,54						Mean			86161,864
						Rate of the Clock . . .			— 0,73
						Vibrations in 24 hours . .			86161,134

1824 *February* 2. a. m.

Hygrometer 34 dy. Barometer 30,063 *Inches.*

Temp.	Time of coincidence.	Arc of oscillation.	Mean Arc.	Interval in seconds.	Number of oscillations.	Observed oscillations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″						+	+	
80	11 43 05,5	1,40							
80	11 54 21	1,205	1,2425	697,5	680,5	86146,65	1,975	7,505	86150,151
80,75	12 06 00,5	1,8	1,1875	660,5	667,5	86145,38	2,150	8,170	86150,100
80	12 17 09,75	1,105	1,1525	690,25	687,25	86148,25	2,170	8,827	86150,273
80,25	12 28 37,5	1,025	1,063	697,75	685,75	86148,78	1,856	8,109	86150,107
80,1							Mean		86150,009
							Rate of the Clock . . .		— 0,75
							Vibrations in 24 hours . .		86150,759

Hygrometer 34 dy. Barometer 30,009

80	1 35 34	1,360	1,4825	677	673	86134,79	2,437	10,575	86158,799
80	1 47 11	1,4	1,395	677,75	675,75	86143,04	2,009	10,751	86158,792
80,25	1 59 09,75	1,31	1,2925	679	677	86145,51	2,011	10,943	86158,966
80	2 09 47,75	1,217	1,128	679,75	677,75	86145,79	2,154	11,096	86159,039
80	2 21 07,5	1,193							
80,05							Mean		86158,905
							Rate of the Clock . . .		— 0,75
							Vibrations in 24 hours . .		86158,155

Hygrometer 37 dy. Barometer 30,018

80,5	2 52 53,25	1,45	1,40	678,75	676,75	86085,61	2,091	10,501	86139,148
81,25	3 14 38	1,29	1,2025	680	678	86085,88	2,260	10,915	86138,975
80	3 26 10	1,255	1,215	681,5	680,5	86086,51	2,419	8,506	86138,102
80,75	3 37 34,5	1,175	1,1575	683,25	681,25	86087,09	2,129	9,461	86138,679
80	3 49 51,75	1,109							
80,37							Mean		86138,966
							Rate of the Clock . .		— 0,75
							Vibrations in 24 hours .		86138,213

Hygrometer 35 dy. Barometer 30,006

80	4 14 03,5	1,240	1,275	684,5	680	86087,37	2,063	9,095	86139,198
81	4 26 47,5	1,205	1,195	683	683	86087,75	2,201	8,679	86138,705
80	4 44 10,5	1,145	1,115	687	687	86089,38	2,037	8,037	86138,994
80	4 56 41,5	1,080	1,055	690	690	86090,89	1,921	7,403	86138,537
80	5 07 13,5	1,705							
80,6							Mean		86089,113
							Rate of the Clock . .		— 0,75
							Vibrations in 24 hours .		86139,463

For the LENGTH of the PENDULUM.

Turon Sur. (*L.*)

1st March a. st.

Rate of the Clock ...0,15 — *Hygrometer* 5,5 *moist.* — *Barom.* 30,051

Temp.	Time of observations. h. ' "	Arc of Vibrations.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours	Correction for Arc. +	Correction for Temperature. +	Vibrations in 24 hours.
80,3	7 51 20,5	1,275							
			1,2125	703,0	703,0	86124,87	2,469	4,442	86131,741
80,3	8 03 25,5	1,150							
			1,10	706	706	86135,94	1,993	4,448	86131,674
80,3	8 14 31,5	1,050							
			1,005	707	707	86135,19	1,633	4,449	86131,097
80,3	8 25 38,5	0,960							
			0,935	705,75	705,75	86135,14	1,457	4,494	86131,958
80,30						Mean			86131,543
						Rate of the Clock ...			— 0,15
						Vibrations in 24 hours ..			86131,393

Hygrometer 8,5 *dry.* — *Barometer* 30,005

81,75	9 23 50,5	1,051							
			1,010	701,5	699,5	86132,67	2,540	4,970	86131,190
81,75	9 35 01	1,169							
			1,1115	701,5	699,5	86132,67	2,778	4,981	86130,889
81,8	9 47 09,5	1,054							
			1,0075	700,75	700,75	86134,11	1,967	5,024	86131,011
82	9 58 45,50	1,030							
			0,9915	700	700	86132,83	1,830	5,070	86130,104
82	10 09 37,25	0,955							
81,90						Mean			86130,994
						Rate of the Clock ...			— 0,15
						Vibrations in 24 hours ..			86130,744

Hygrometer 69 *dry.* — *Barometer* 30,040

86	11 03 13,5	1,050							
			1,0072	694,25	693,25	86130,98	2,260	7,397	86100,668
85,5	11 14 47,25	1,16							
			1,18	691,5	689,5	86130,11	2,656	8,118	86100,376
85	11 26 58,85	1,20							
			1,243	688	686	86128,92	1,799	8,879	86100,281
85	11 37 50,05	1,03							
			0,973	686,5	686,5	86129,73	2,537	9,095	86100,602
85,5	11 49 30,75	0,98							
85,5						Mean			86100,982
						Rate of the Clock ...			— 0,15
						Vibrations in 24 hours ..			86100,832

Hygrometer 11,5 *dry.* — *Barometer* 30,088

84	1 37 19,5	1,095							
			1,075	693,5	688,5	86130,81	8,603	10,320	86150,785
84,75	1 48 30	1,055							
			1,1025	683	681,5	86147	8,991	10,305	86150,044
84,5	2 00 58	1,14							
			1,1025	683,25	681,25	86147,09	8,809	10,194	86148,948
84	2 11 47,25	1,055							
			1,021	680,75	680,75	86146,81	8,747	10,130	86148,804
84,28						Mean			86150,270
						Rate of the Clock ...			— 0,15
						Vibrations in 24 hours ..			86150,393

1st *March* 1. M.

Hygrometer 30,5 deg. Barom. 27,914 Inches.

Temp.	Time of coincidences.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ' "		°	"			"	"	
84	3 32 23,25	1,413	1,3795	599,75	643,31	86146,85	2,081	0,666	86080,042
83,5	4 29 37	1,35	1,373	600	600,8	86187,37	2,034	0,655	86160,503
83	4 40 38	1,33	1,355	600,5	600,8	86187,98	2,005	0,650	86160,581
82,75	4 51 37,5	1,31	1,33	600,3	600,8	86186,99	1,976	0,650	86160,453
82	5 42 38	0,76							
82,91						Mean			86168,639
						Rate of the Clock			— 0,13
						Vibrations in 24 hours			86168,509

Hygrometer 31 deg. Barom. 28,013

82,5	4 50 26,5	1,349	1,33	597,82	600,81	86058,58	2,160	0,786	86055,634
80,1	5 09 35,75	1,327	1,3175	599,5	602,5	86149,28	2,139	0,779	86150,345
80	5 19 35,25	1,315	1,3075	599,25	602,25	86150,62	2,107	0,769	86150,745
80	5 29 36,5	1,04	1,033	599,75	602,75	86151,64	1,665	0,608	86150,630
87,5	5 42 59,25	0,89							
83,22						Mean			86150,723
						Rate of the Clock			— 0,13
						Vibrations in 24 hours			86150,593

1st *March* 9. M.
Rate of the Clock 4,33 Hygrometer 98 moist. Barom. 29,051

78	7 09 59	1,255	1,205	703,25	703,91	86134,59	2,580	0,939	86130,570
76	7 21 11,25	1,253	1,2025	703,5	703,5	86134,57	2,569	0,936	86130,567
76	7 32 44,75	1,179	1,135	700,25	700,91	86133,35	2,511	0,914	86130,063
76,5	7 44 41	1,107	1,0625	703,5	703,5	86133,07	2,355	2,238	86128,478
76,5	7 56 35,5	1,085							
76,8						Mean			86130,943
						Rate of the Clock			+ 9,33
						Vibrations in 24 hours			86140,283

Hygrometer 95 moist. Barom. 29,091

79	9 41 55,5	1,209	1,159	704	699,9	86135,19	2,613	3,507	86128,899
79	9 53 26,5	1,015	1,1675	703,75	700,75	86134,84	2,533	3,513	86128,583
79,2	10 07 30,25	1,19	1,1475	704,25	700,9	86134,56	2,502	3,503	86128,159
79,5	10 19 04,25	1,055	0,9925	703,5	703,5	86134,57	1,514	4,284	86128,004
79,8	10 30 47,25	0,93							
79,3						Mean			86128,389
						Rate of the Clock			+ 9,33
						Vibrations in 24 hours			86137,719

3d March a. c.

Hygrometer 18 deg. Barometer 30,025 Inches.

Temp.	Time of observation.	Arc of Oscillation.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Corrections for Arc.	Corrections for Temperature	Vibrations in 24 hours.
	h. ′ ″	°	°	″			+	+	
84,5	11 39 58	1,875							
			1,838	606	604	86151,78	0,472	0,220	86150,438
85	12 10 44	1,185							
			1,1485	607	605	86029,08	0,139	0,109	86167,687
85,3	12 39 31	1,100							
			1,0980	606,25	604,25	86030,81	0,365	0,312	86169,123
85,5	13 20 37,25	1,095							
			0,9915	608,25	606,25	86036,18	1,038	0,513	86168,693
85,5	13 45 51,8	0,76							
85,19						Mean			86169,895
						Rate of the Clock . . .			+ 0,56
						Vibrations in 24 hours . .			86167,091

Hygrometer 17 deg. Barometer 30,006

85,5	1 37 10,5	1,85							
			1,8005	607	605	86158,08	0,360	7,038	86151,881
85,75	2 08 47,5	1,455							
			1,188	608,5	606,5	86155,19	0,805	7,202	86150,770
86	2 30 39	1,045							
			1,080	607	605,0	86158,06	1,705	7,014	86151,599
86	2 51 05	0,975							
			0,945	606,5	604,5	86151,90	1,418	7,038	86151,800
86,3	3 49 35,5	0,905							
85,87						Mean			86151,164
						Rate of the Clock . . .			+ 0,58
						Vibrations in 24 hours . .			86151,714

Hygrometer 17 deg. Barometer 30,013

86,5	4 03 28,75	1,39							
			1,3915	608,25	606,25	86158,39	2,833	8,245	86158,847
86,5	4 17 07	1,315							
			1,1785	608	606	86158,84	2,250	8,163	86151,224
86	4 39 35	1,13							
			1,095	606,5	604,5	86149,13	1,994	7,895	86139,240
86	4 49 03,5	1,060							
			1,0275	606,5	604,5	86148,73	1,736	7,809	86156,598
87,3	4 53 36	0,995							
86,70						Mean			86153,458
						Rate of the Clock . . .			+ 0,53
						Vibrations in 24 hours . .			86153,944

4th March a. c.
Rate of the Clock—0,55. Hygrometer 21. moist. Barometer 30,010

86,5	9 38 56	1,905							
			1,8905	708,5	706,5	86154,09	8,370	6,459	86161,059
85,5	10 04 40,5	1,80							
			1,135	708,75	706,75	86154,70	3,396	4,547	86167,855
85	10 18 58,25	1,31							
			1,0825	706,5	704,5	86151,81	1,867	4,700	86161,065
85,25	10 39 09,25	1,085							
			0,9955	706,5	704,5	86154,78	1,514	4,717	86161,351
85	10 57 55,95	0,90							
85,25						Mean			86161,350
						Rate of the Clock . . .			— 0,556
						Vibrations in 24 hours . .			86160,940

5th March A. M.

Hygrometer 17 moist. Barometer 30,058 *Inches.*

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″			″			+	+	
85	11 51 50	1,46							
			1,4025	697,5	695,5	86152,85	3,213	5,134	86161,817
84	12 03 33,5	1,345							
			1,2975	695	693,0	86151,37	2,758	5,922	86160,030
84	12 15 05,5	1,25							
			1,2975	698,25	696,25	86152,52	2,380	5,880	86161,249
82,8	12 26 40,75	1,165							
			1,1275	699,25	697,25	86152,82	2,006	5,837	86160,723
83,8	12 38 05	1,08							
84,32									

Mean 86160,810
Rate of the Clock . . . — 0,250
Vibrations in 24 hours . . 86160,660

Hygrometer 11,5 moist. Barometer 30,038

84	12 50 18	1,365							
			1,3225	697	695	86152,08	2,909	5,608	86160,817
83	1 07 55	1,28							
			1,2275	699,5	697,5	86152,97	2,509	5,230	86160,800
82,2	1 19 34,5	1,785							
			1,151	700,25	698,25	86153,82	2,170	5,430	86160,838
83,5	1 31 18,75	1,107							
			1,066	699,25	697,25	86152,88	1,902	6,239	86160,991
86	1 42 54	1,095							
83,74									

Mean 86160,828
Rate of the Clock . . . — 0,23
Vibrations in 24 hours . . 86160,371

Hygrometer 5,3 dry. Barometer 30,012

83,5	3 17 22,5	1,435							
			1,3625	697	695	86152,08	3,049	5,005	86160,725
83	3 28 37,5	1,31							
			1,2875	693,75	693,75	86151,04	2,633	5,169	86159,719
83	3 40 33,25	1,225							
			1,1875	693,75	696,75	86152,70	2,310	5,417	86160,667
82,8	3 52 12	1,15							
			1,1125	698,75	696,75	86152,70	2,051	5,354	86160,802
82,5	4 03 50,75	1,075							
82,96									

Mean 86160,918
Rate of the Clock . . . — 0,23
Vibrations in 24 hours . . 86160,697

5th March A. M.
Rate of the Clock 0,57

Hygrometer 1 moist. Barometer 30,151

82	7 49 11,5	1,345							
			1,2875	703,0	701,0	86154,39	2,716	4,653	86161,559
82	7 51 54,5	1,23							
			1,1775	704,25	702,25	86154,63	2,272	4,759	86161,631
81,5	8 03 28,75	1,125							
			1,085	704,50	702,5	86154,72	1,929	4,908	86161,577
81,8	8 15 03,25	1,045							
			1,040	705,25	703,25	86154,98	1,671	5,013	86161,664
81,9	8 27 08,5	0,975							
81,44									

Mean 86161,608
Rate of the Clock . . . — 0,57
Vibrations in 24 hours . . 86161,038

8th March a. m.

Hygrometer 11 deg. Barometer 30,136

Temp.	Time of coincidence.	Arc of Vibrations.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Corrections for Arc.	Corrections for Temperature.	Vibrations in 24 hours.
	h. ' "						+	+	
88	9 34 07,5	1,34	1,355	700,00	701,0	86134,19	2,735	5,026	86161,971
89	10 07 05,5	1,35	1,3775	700,75	700,75	86134,11	2,772	5,007	86161,879
89,1	10 14 23,75	1,375	1,0875	701,75	699,75	86135,35	2,528	5,209	86162,090
87	10 20 15	1,05	1,055	700,75	700,75	86134,11	2,089	5,241	86161,329
88,0	10 23 17,25	0,86							
88,46						Mean			86161,849
						Rate of the Clock . . .			— 0,37
						Vibrations in 24 hours . .			86160,807

Hygrometer 16 deg. Barometer 30,125

92,5	21 30 07,75	1,100	1,2125	703,00	699,0	86133,14	2,975	5,094	86161,229
92,0	19 41 00,75	1,000	1,2875	701,50	699,5	86135,67	2,550	5,113	86161,283
92,0	19 18 09,25	1,200	1,155	703,75	699,75	86138,76	2,369	5,119	86161,004
92	18 57 44	1,11	1,07	704	700,0	86134,55	1,870	5,070	86161,089
92	18 39 49	1,03							
92,4						Mean			86161,351
						Rate of the Clock . . .			— 0,37
						Vibrations in 24 hours . .			86160,241

Hygrometer 89,5 deg. Barometer 30,091

93,5	1 34 19,5	1,353	1,3925	700	699,0	86138,14	2,727	5,124	86162,611
89,0	2 03 56,0	1,38	1,410	699,75	697,25	86133,04	2,301	5,098	86161,309
94	2 33 36,00	1,42	1,0975	702,75	701,75	86135,80	1,999	5,202	86163,001
94	2 55 19	1,055	0,9925	702,5	703,0	86134,37	1,814	5,209	86161,993
94	3 47 05,5	0,93							
94,0						Mean			86161,897
						Rate of the Clock . . .			— 0,37
						Vibrations in 24 hours . .			86161,297

Hygrometer 93 deg. Barometer 30,091

94	3 34 51	1,311	1,300	698,00	697	86138,79	2,001	5,210	86161,975
95,5	4 05 36	1,305	1,1975	701,00	699	86135,49	2,514	5,211	86161,315
93,0	4 33 17	1,19	1,09	700,00	701	86134,59	1,911	5,205	86161,705
93	4 56 14	1,04	1,005	703	703	86134,88	1,853	5,199	86161,934
93	5 20 29	0,97							
93,4						Mean			86161,999
						Rate of the Clock . . .			— 0,37
						Vibrations in 24 hours . .			86161,629

19th *March* s. v.

Rate of the Clock—0,04 Hygrometer 6 units. Barometer 30,197 *Inches.*

Temp.	Time of observation. h. ′ ″	Arc of vibrations.	Mean Arc.	Lowered in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Corrections for Arc. +	Corrections for Temperature. +	Vibrations in 24 hours.
80	6 21 20,5	1,410							
80	6 33 32,5	1,395	1,3975	100,00	709,8	86159,85	0,973	4,150	86161,023
80	6 45 45,5	1,390	1,3875	104,00	709,8	86154,75	0,950	4,870	86161,720
80	6 57 57,5	1,380	1,380	104,33	709,85	86154,63	0,186	4,955	86161,189
80,3	7 10 10,75	1,38	1,379	702,33	701,85	86154,05	1,876	5,463	86160,619
80,3	7 22 20	1,39							

Mean 86161,599
Rate of the Clock . . . — 0,04
Vibrations in 24 hours . . 86160,599

Hygrometer 5,5 dry. Barometer 30,137

81,6	9 37 15,5	1,310							
82	9 49 30	1,3	1,355	708,5	708,5	86154,99	0,342	5,000	86161,835
82,2	10 00 50	1,33	1,3395	705	705,0	86154,99	0,176	5,139	86161,164
82,6	10 20 43	1,305	1,305	700	700	86154,99	1,854	5,996	86161,838
82,8	10 32 05	1,065	0,9975	706,05	704,85	86155,55	1,809	5,837	86163,235
83	10 44 14,85	0,86							

Mean 86161,013
Rate of the Clock . . . — 0,04
Vibrations in 24 hours . . 86161,013

Hygrometer 13,5 dry. Barometer 30,153

83,6	10 57 34	1,26							
83,8	11 09 17,5	1,18	1,23	703,5	701,5	86156,57	0,479	5,774	86164,823
84	11 21 01,5	1,09	1,135	704	709,0	86154,53	0,311	5,990	86160,181
84	11 32 45,25	1,065	1,0875	704,75	709,75	86154,01	1,759	5,782	86161,552
84	11 44 32,5	0,995	0,963	703,85	708,85	86154,05	1,500	5,909	86160,459

Mean 86161,531
Rate of the Clock . . — 0,04
Vibrations in 24 hours . 86161,501

Hygrometer 23 dry. Barometer 30,121

86	12 57 45,5	1,49							
87,2	1 09 28,75	1,39	1,35	694,85	699,85	86152,19	0,690	7,460	86161,340
87,6	1 20 55	1,37	1,35	695,25	699,25	86151,40	0,560	7,360	86161,360
87,9	1 32 20,5	1,30	1,33	697,5	699,5	86152,76	0,107	7,360	86162,787
87,1	1 44 10,75	1,31	1,035	698,05	698,05	86158,38	1,849	7,771	86167,989

Mean 86161,369
Rate of the Clock . . — 0,04
Vibrations in 24 hours . 86161,343

11th March a. m.

Hygrometer 21,5 deg. — *Zeeker.* Barometer 30,073

Temp.	Time of coincidence.	Arc of Vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″			″			+	+	
80,3	3 11 47,75	1,355							
			1,3025	692,5	650,5	86150,47	2,780	8,096	86161,436
80,5	3 25 20,95	1,25							
			1,30	681	659,0	86147,53	2,550	8,555	86160,642
80	3 38 51,25	1,15							
			1,105	692,75	660,75	86150,56	2,001	8,312	86160,873
80,3	3 46 24	1,05							
			1,025	693,5	651,5	86150,83	1,781	8,143	86160,802
80,2	3 57 57,5	0,99							
80,40								Mean	86160,910
								Rate of the Clock . . .	— 0,04
								Vibrations in 24 hours . .	86160,876

12th March a. m.
Rate of the Clock + 0,20. — Hygrometer 12 moist. — Barometer 30,070

79,5	6 33 45	1,375							
			1,2975	703,0	701,0	86154,19	2,469	4,174	86160,833
80	6 45 28	1,18							
			1,14	705,75	704,75	86155,50	2,129	4,379	86161,001
80,8	6 57 14,75	1,10							
			1,0925	705,75	703,75	86155,18	1,850	4,392	86161,392
80,8	7 09 00,5	1,085							
			0,9925	706,25	704,25	86155,33	1,614	4,611	86161,553
81	7 20 46,75	0,90							
80,3								Mean	86161,400
								Rate of the Clock . . .	+ 0,93
								Vibrations in 24 hours . .	86161,600

Hygrometer 7,5 moist. — Barometer 30,121

82	9 41 34,25	1,320							
			1,2075	702	703	86153,85	2,633	5,074	86161,339
82	9 53 36,25	1,215							
			1,1075	703,5	701,5	86154,37	2,033	5,182	86161,785
82,5	10 05 10,75	1,11							
			1,0775	703,25	701,25	86154,25	1,902	5,293	86161,375
83	10 17 03	1,035							
			0,9975	705,5	703,5	86155,07	1,630	5,541	86162,241
83,2	10 28 48,5	0,96							
82,54								Mean	86161,370
								Rate of the Clock . . .	+ 0,20
								Vibrations in 24 hours . .	86161,900

Hygrometer 3 moist. — Barometer 30,113

83,8	10 32 09,5	1,405							
			1,2985	708	694	86153,14	2,997	5,022	86162,059
84,2	10 44 09,5	1,3							
			1,29	699,5	697,5	86152,97	2,560	5,176	86161,706
85	10 55 49	1,2							
			1,15	708,5	698,5	86153,32	2,167	5,408	86161,899
85,3	11 07 20,5	1,1							
			1,055	709,25	698,25	86153,23	1,924	5,514	86161,508
85,5	11 19 09,75	1,01							
84,70								Mean	86161,807
								Rate of the Clock . . .	+ 0,20
								Vibrations in 24 hours . .	86162,007

18th March A. M.

Hygrometer 1,5 dry. Barometer *Inches.* 30,078

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″			″			+	+	
83,5	1 53 09,5	1,420							
			1,3025	697	695	86158,08	3,042	6,134	86161,255
85,5	1 43 06,5	1,305							
			1,255	695,25	693,25	86151,46	2,581	6,557	86160,597
85,5	1 36 41,75	1,205							
			1,1375	698	696	86152,44	2,195	6,705	86161,340
86,2	2 08 19,75	1,11							
			1,07	696,75	694,75	86151,99	1,876	7,064	86160,930
87,2	2 19 56,5	1,03							
85,58						Mean			86161,030
						Rate of the Clock . . .			+ 0,20
						Vibrations in 24 hours . .			86161,230

Hygrometer 3,5 dry. Barometer 30,072

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
87,3	2 52 58,75	1,28							
			1,235	695,25	693,25	86151,46	2,499	7,254	86161,213
87	2 44 34	1,19							
			1,1475	695,5	693,5	86151,55	2,157	7,043	86160,749
86,3	2 36 09,5	1,105							
			1,065	697	695,0	86152,08	1,858	6,708	86160,706
85,7	3 07 46,5	1,025							
			0,990	697,5	695,5	86152,20	1,608	6,705	86160,573
86	3 19 24	0,955							
86,46						Mean			86160,843
						Rate of the Clock . . .			+ 0,20
						Vibrations in 24 hours . .			86161,043

For the LENGTH of the PENDULUM.

Second Set. (L.)

1823. 15th March o. m.

Rate of the Clock + 0,15 — Hygrometer 81,5 moist. — Barometer 30,103.

Temp.	Time of commencement.	Arc of Vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″	°	°	″			+	+	
80	7 34 28,5	1,80							
			1,45	C59	697	86159,79	3,086	4,340	86166,819
80,5	7 39 08,5	1,40							
			1,25	689,25	691,25	86158,80	2,686	4,347	86165,833
81	7 53 47,75	1,20							
			1,03	701,50	699,65	86153,35	2,360	4,358	86160,068
81	8 05 29	1,00							
			1,1505	723,05	721,88	86154,25	2,252	4,716	86161,179
81,3	8 17 10,25	1,305							
80,70						Mean			86163,550
						Rate of the Clock . . .			+ 0,15
						Vibrations in 24 hours . .			86163,700

Hygrometer 18,5 dry. — Barometer 28,021

82,9	9 50 03	1,60							
			1,25	695,5	697,3	86159,07	2,986	5,324	86167,380
83,5	10 01 4,5	1,20							
			1,05	700,75	698,75	86155,46	2,669	5,351	86163,511
83,8	10 12 43,25	1,07							
			1,1575	700,05	699,85	86155,82	2,150	5,457	86163,959
83	10 25 36,3	1,113							
			1,0705	702	700,0	86155,85	1,886	5,608	86163,403
84	10 37 08,5	1,03							
82,9						Mean			86163,844
						Rate of the Clock . . .			+ 0,15
						Vibrations in 24 hours . .			86163,994

Hygrometer 17,5 dry. — Barometer 30,115

89	13 53 28	1,14							
			1,2025	688	687	86149,19	3,139	8,672	86160,904
91	14 04 08	1,025							
			1,0775	699,75	697,75	86149,87	2,553	8,777	86160,800
89,5	14 15 51,75	1,03							
			1,1725	699	698	86149,57	2,238	8,899	86160,699
91,5	14 28 01,25	1,195							
			1,0905	695,25	697,25	86149,87	1,949	9,013	86160,639
88,5	14 39 21,5	1,01							
91,58						Mean			86160,803
						Rate of the Clock . . .			+ 0,15
						Vibrations in 24 hours . .			86160,955

Hygrometer 44,5 dry. — Barometer 30,095

59	2 14 49	1,40							
			1,25	682,85	679,85	86145,96	2,986	10,375	86159,321
55	2 25 52,35	1,30							
			1,1505	681,5	679,5	86146,44	2,670	10,375	86159,569
53	2 37 34,25	1,205							
			1,10	683,25	681,25	86147,28	2,354	10,385	86160,017
56,5	2 49 03,7	1,114							
			1,025	680	678,5	86145,96	1,893	10,385	86158,884
54,58						Mean			86159,707
						Rate of the Clock . . .			+ 0,15
						Vibrations in 24 hours . .			86159,317

13th March a. m.

Hygrometer 68,5 deg. Barometer 30,181 Inches.

Temp.	Time of coincidence.	Arc of vibrations.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc. +	Correction for Temperature. +	Vibrations in 24 hours.
84,9	9 42 13,5	1,70							
85,7	9 51 39	1,70	1,701	567,5	150,5	86160,81	2,981	10,179	86150,951
85	1 43 39,5	1,70	1,695	580,5	151,5	86147,15	2,940	9,977	86150,287
87,8	4 27 45,75	1,12	1,698	566,33	154,33	86148,50	2,994	9,847	86150,111
88,8	4 45 51	1,03	1,095	553,33	153,33	86147,82	1,909	9,816	86150,977
85,20						Mean			86150,709
						Rate of the Clock . . .			+ 0,13
						Vibrations in 24 hours . .			86150,849

13th March a. m.
Rate of the Clock + 0,24 Hygrometer 4 moist. Barometer 30,180

90,3	6 22 37	1,10	1,550	703	702,0	86151,79	2,006	4,299	86161,875
90,4	6 34 19	1,20	1,650	702,75	721,25	86154,28	2,360	4,454	86161,394
91,5	6 43 53,25	1,09	1,515	705,25	705,25	86154,09	2,160	4,511	86161,777
91	6 57 28,5	1,11	1,675	708,00	704,25	86153,95	1,867	4,801	86161,998
90,72	7 08 58,75	1,095				Mean			86161,860
						Rate of the Clock . . .			+ 0,24
						Vibrations in 24 hours . .			86162,000

Hygrometer 4 moist. Barometer 30,133

92,8	9 37 40,5	1,89	1,585	700,75	698,75	86155,80	3,050	5,457	86161,810
93	9 47 01,75	1,31	1,650	701,75	699,75	86153,58	2,581	5,580	86161,861
93,3	10 00 43	1,89	1,5575	703	701,0	86154,16	3,005	4,760	86162,165
93,5	10 12 56	1,115	1,675	703,5	701,5	86154,37	1,836	5,813	86162,008
93,08						Mean			86161,950
						Rate of the Clock . .			+ 0,24
						Vibrations in 24 hours .			86162,000

Hygrometer 6 Barometer 30,133

94	10 37 28,75	1,855	1,2855	686,75	686,75	86150,20	3,139	0,000	86161,891
93,7	10 26 17,5	1,85	1,2775	690	687,0	86150,79	3,078	5,151	86161,815
93,8	10 39 36,5	1,895	1,160	688,75	686,75	86150,79	3,251	6,207	86161,918
92	10 09 39,25	1,139	1,985	689,25	686,25	86150,59	1,893	7,814	86160,006
93,7	10 16 33,5	1,055				Mean			86161,760
						Rate of the Clock . .			+ 0,24
						Vibrations in 24 hours .			86162,000

14th March a. m.

Hygrometer 61 deg. Barom. Barometer 30,013

Temp.	Time of coincidence.	Arc of Vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed Vibrations in 24 hours.	Corrections for Arc.	Corrections for Temperature.	Vibrations in 24 hours.
	h. ′ ″	°	°	″			+	+	
69	1 13 23,5	1,63	1,586	692,5	629,5	90286,07	2,199	11,026	90300,431
67	1 36 16	1,53	1,59	693,75	679,75	90288,16	2,737	11,187	90307,328
67	1 45 01,75	1,54	1,585	693,75	679,75	90289,59	2,737	11,187	90310,376
67,5	1 59 05,5	1,55	1,53	693	681,0	90287,09	2,629	11,275	90300,996
68,0	2 10 49,5	1,57							
68,10						Mean			90300,533
						Rate of the Clock . . .			+ 0,58
						Vibrations in 24 hours . .			90301,743

Hygrometer 61 deg. Barometer 30,083

68,5	2 14 00,25	1,600	1,558	695,25	681,25	90247,05	2,556	10,510	90259,998
68	2 35 18,5	1,509	1,556	695,0	680	90246,63	2,581	10,786	90260,009
69	2 37 41,5	1,51	1,1075	694,25	680,25	90247,40	2,629	11,040	90260,733
69,0	2 49 03,25	1,155	1,042	694	680,0	90247,27	2,629	11,110	90260,454
68,5	2 60 09,75	0,93							
68						Mean			90260,278
						Rate of the Clock . . .			+ 0,54
						Vibrations in 24 hours . .			90261,118

Hygrometer 61 deg. Barometer 29,979

68,5	3 02 27,5	1,455	1,373	690,25	679,25	90143,09	2,629	11,364	90169,197
68	3 14 57,75	1,295	1,260	692,25	680,25	90146,79	2,681	11,354	90167,781
68,0	3 26 28	1,225	1,1982	694	680,0	90147,22	2,737	10,997	90169,105
68,0	3 37 49	1,150	1,115	693,25	680,25	90147,83	2,737	10,851	90169,548
68,1	3 49 11,25	1,08							
68,10						Mean			90169,657
						Rate of the Clock . . .			+ 0,54
						Vibrations in 24 hours . .			90170,743

15th March a. m.
Rate of the Clock—0,58. Hygrometer 59,5 solar. Barometer 30,141

76,5	7 28 00,75	1,48	1,469	708,75	704,75	89113,10	2,787	9,508	89121,758
77	7 34 12,5	1,57	1,59	707,5	703,5	89139,70	2,555	9,581	89121,676
77	7 56 04	1,62	1,595	708	705	89139,95	2,450	9,802	89121,209
77,0	7 47 49	1,58	1,14	705,5	707,5	89139,55	2,189	9,189	89121,659
77,5	7 59 36,5	1,70							
77,08						Mean			89121,600
						Rate of the Clock . . .			— 0,58
						Vibrations in 24 hours . .			89122,209

14th March a. m.

Hygrometer 32,5 moist. Barometer 30,164 *Inches.*

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″			″			+	+	
79,4	9 35 29,25	1,67							
			1,615	700,75	700,75	86154,11	3,281	4,003	86161,394
80	9 47 18	1,56							
			1,305	705	703,5	86154,30	2,750	4,072	86160,859
80,2	9 58 37	1,25							
			1,29	705	703	86154,89	2,259	4,205	86161,384
80,2	10 10 14	1,15							
			1,11	705,5	704,5	86155,41	2,019	4,288	86161,817
80,5	10 22 28,5	1,07							
83,04								Mean	86161,682
								Rate of the Clock . . .	— 0,300
								Vibrations in 24 hours . .	86161,382

Hygrometer 0 moist. Barometer 30,164

84	11 20 20,5	1,41							
			1,380	698,5	698,5	86152,61	2,021	6,028	86161,088
84,5	11 47 59	1,31							
			1,255	700,75	698,75	86152,40	2,381	6,279	86160,920
85	12 10 20,75	1,2							
			1,1505	700,50	699,50	86153,78	2,176	6,345	86161,841
85	12 11 20,25	1,105							
			1,060	703,75	701,75	86154,46	1,841	6,345	86160,646
85	12 22 04	1,015							
84,7								Mean	86160,924
								Rate of the Clock . . .	— 0,30
								Vibrations in 24 hours . .	86161,754

Hygrometer 8,5 dry. Barometer 30,161

84	1 35 59,5	1,14							
			1,0475	698,5	698,5	86151,19	2,975	6,028	86160,193
84,5	1 47 54	1,095							
			1,0475	695,75	695,75	86151,64	2,350	6,225	86160,829
85	1 59 09,75	1,2							
			1,135	694,25	692,25	86151,10	2,186	6,345	86159,631
85	2 10 44	1,11							
			1,0875	697	695,0	86152,08	1,867	6,509	86160,544
85,2	2 22 21	1,025							
84,94								Mean	86160,930
								Rate of the Clock . .	— 0,30
								Vibrations in 24 hours . .	86160,907

Hygrometer 22,5 dry. Barometer 30,152

80,2	2 34 03,5	1,62							
			1,3675	699,75	698,75	86149,84	3,003	9,227	86161,131
80,7	2 43 34,25	1,315							
			1,265	691,50	690,50	86150,11	2,022	8,207	86160,390
80	2 52 05,75	1,215							
			1,1875	690	690,0	86149,57	2,233	8,460	86160,265
80	3 08 25,75	1,12							
			1,0775	694,25	694,25	86151,10	1,902	8,482	86160,862
80,1	3 20 10	1,035							
80,8								Mean	86160,564
								Rate of the Clock . .	— 0,30
								Vibrations in 24 hours . .	86160,264

18th March A. M.

Rate of the Clock = 1,10 — Hygrometer 4,5 *dry.* — *Inches.* Barometer 30,[illegible]

Temp.	Time of coincidence.	Arc of Vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″						+	+	
80,5	6 30 40,25	1,41							
			1,355	701,75	707,25	86151,81	3,008	4,517	86162,361
81	7 02 24	1,30							
			1,250	707	703	86153,59	2,504	4,719	86162,806
81,2	7 14 21	1,07							
			1,15	707	705	86153,52	2,167	4,843	86162,800
81,6	7 25 08	1,16							
			1,2025	709	707	86156,28	1,992	4,979	86163,249
81,9	7 37 37	1,103							
81,20								Mean	86162,765
								Rate of the Clock . . .	— 1,10
								Vibrations in 24 hours . .	86161,[illegible]

Hygrometer 1 *dry.* — Barometer 30,[illegible]

82,5	9 15 09	1,425							
			1,3675	700	698	86153,14	3,064	5,647	86161,851
82,9	9 25 49	1,31							
			1,065	702	701	86154,19	2,022	5,569	86162,274
83	9 38 32	1,22							
			1,175	704,75	702,75	86154,81	2,992	5,499	86162,571
83	9 50 10,25	1,13							
			1,0825	703,75	703,75	86155,15	1,990	5,502	86162,639
83,3	10 02 02,5	1,035							
83,2								Mean	86162,357
								Rate of the Clock . . .	— 1,10
								Vibrations in 24 hours . .	86161,237

Hygrometer 15,5 *dry.* — Barometer 30,077

89,5	11 46 55,75	1,40							
			1,35	692	690	86150,29	2,986	8,566	86161,842
91	11 58 27,75	1,30							
			1,25	690,75	689,75	86149,34	2,560	9,200	86161,600
92,5	11 59 58,5	1,22							
			1,1525	692	690	86150,29	2,178	9,771	86162,237
92,7	11 51 30,5	1,105							
			1,065	688	687	86149,10	1,851	10,173	86161,921
91,4	12 02 30,50	1,025							
92,22								Mean	86161,795
								Rate of the Clock . . .	— 1,10
								Vibrations in 24 hours . .	86160,695

Hygrometer 12,5 *dry.* — Barometer 30,074

95,5	1 02 41,5	1,405							
			1,2575	688	680	86146,03	2,997	11,213	86160,843
97	1 14 02,5	1,30							
			1,2500	682	680	86146,63	2,500	11,403	86160,633
97,2	1 25 23,5	1,20							
			1,1525	683	681	86147	2,176	11,963	86160,436
96,1	1 36 46,5	1,105							
			1,065	680,25	684,95	86148,90	1,858	11,019	86160,677
96	1 48 14,75	1,025							
96,56								Mean	86160,777
								Rate of the Clock . . .	— 1,10
								Vibrations in 24 hours . .	86159,677

15th March s. v.

Hygrometer 86,5 deg. Barometer 30,015 Inches.

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″						+	+	
91,5	1 55 49	1,430	1,40	590,5	475,5	86146,07	7,011	10,534	86139,523
91,6	2 09 37,5	1,35	1,393	594,25	472,25	86147,69	6,790	10,530	86138,160
92	2 23 26,75	1,395	1,3975	590,75	481,75	86147,28	6,859	10,529	86138,917
91,5	2 37 10,5	1,325	1,3625	594,25	482,25	86147,69	6,601	10,534	86139,091
91,3	2 51 01,75	1,39							
91,58							Mean		86138,923
							Rate of the Clock . . .		— 1,38
							Vibrations in 24 hours . .		86136,585

15th March s. v.
Rate of the Clock—1,38 Hygrometer 11 mild. Barometer 30,008

80,5	7 23 42,75	1,449	1,373	722,25	720,75	86134,58	5,089	4,250	86133,419
80	7 37 29	1,295	1,3725	720	720	86133,84	5,078	4,249	86133,591
79,8	7 49 03	1,09	1,193	727	725	86135,58	5,201	4,267	86133,937
79,9	8 01 03	1,14	1,19	709,25	707,25	86136,26	5,163	4,259	86133,551
80	8 12 51,25	1,06							
80,04							Mean		86133,594
							Rate of the Clock . . .		— 1,38
							Vibrations in 24 hours . .		86131,581

Hygrometer 17,5 mild. Barometer 30,002

81,9	9 27 40,5	1,185	1,2325	722,25	721,25	86134,91	5,207	5,055	86133,551
82	9 41 23,75	1,3	1,2425	725,25	723,25	86134,69	5,228	5,058	86133,695
82	9 55 09	1,265	1,2775	722,25	722,25	86134,58	5,205	5,057	86133,572
81,5	10 12 58,25	1,11	1,1875	708,75	709,25	86134,55	5,067	4,958	86133,450
81,9	10 25 31,5	1,095							
81,89							Mean		86133,820
							Rate of the Clock . .		— 1,38
							Vibrations in 24 hours . .		86131,569

Hygrometer 7 dry. Barometer 30,009

88,5	11 39 07,50	1,325	1,325	694	689	86131,01	6,927	5,070	86131,066
89,7	11 53 01,25	1,475	1,4075	691,50	686,5	86131,15	6,949	5,119	86132,077
90,1	12 06 53,75	1,38	1,3525	696,50	693,25	86131,34	6,111	5,087	86132,094
90,9	12 20 50	1,39	1,385	694	690	86131,01	6,806	5,220	86131,031
91,1	12 34 43	1,34							
88,69							Mean		86131,595
							Rate of the Clock . .		— 1,380
							Vibrations in 24 hours . .		86130,215

28th March a. m.

Hygrometer 54,5 *dry.* — *Jochen.* Barometer 30,041

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″						+	+	
84,5	1 37 54,25	1,38							
			1,33	684	682	86147,37	2,808	10,617	86160,855
85,7	1 49 19,25	1,28							
			1,225	683	683	86147,73	1,409	11,140	86161,373
86	2 00 43,25	1,19							
			1,1475	682,75	681,75	86147,56	2,157	10,977	86160,814
85,9	2 12 07	1,105							
			1,065	687,75	683,75	86148,14	1,858	10,871	86161,680
85,5	2 23 34,75	1,025							
85,85								Mean	86161,836
								Rate of the Clock . . .	— 1,32
								Vibrations in 24 hours . .	86160,916

Hygrometer 53,5 *dry.* — Barometer 30,011

95	3 37 02,5	1,42							
			1,37	684,5	682,5	86147,55	3,075	10,448	86161,073
94,8	3 48 27	1,32							
			1,2725	685,5	683,5	86147,58	2,653	10,278	86160,832
94,2	3 59 39,5	1,225							
			1,180	687,5	685,5	86148,66	2,281	10,132	86161,083
93,8	4 11 20	1,135							
			1,1425	686,25	688,25	86149,66	2,139	9,858	86161,697
93	4 22 30,25	1,15							
94,08								Mean	86161,378
								Rate of the Clock . . .	— 1,32
								Vibrations in 24 hours . .	86160,056

29th March a. m.
Rate of the Clock—0,38.

Hygrometer 11 moist. — Barometer 30,014

79	6 37 45,5	1,325							
			1,470	703,5	701,5	86154,37	3,541	3,807	86161,718
79	6 49 29	1,415							
			1,2925	704,75	702,75	86154,81	3,042	3,913	86161,765
79,5	7 01 13,75	1,81							
			1,2375	706,25	704,25	86155,33	2,591	4,103	86162,021
79,9	7 13 09	1,225							
			1,1575	708	706,0	86155,93	2,196	4,191	86162,313
79,9	7 24 48	1,11							
79,40								Mean	86161,955
								Rate of the Clock . . .	— 0,38
								Vibrations in 24 hours . .	86161,675

Hygrometer 18 moist. — Barometer 30,110

80,8	9 31 11,75	1,515							
			1,460	708,50	700,50	86154,02	3,493	4,611	86162,124
81	9 42 54,25	1,405							
			1,2475	709,25	705,25	86154,98	2,975	4,653	86162,009
81	9 54 30,5	1,290							
			1,249	703,5	703,5	86155,07	2,519	4,655	86162,294
81,2	10 06 25	1,19							
			1,1475	707	706	86155,59	2,139	4,565	86162,594
81,6	10 18 12	1,005							
81,16								Mean	86162,403
								Rate of the Clock . . .	— 0,38
								Vibrations in 24 hours . .	86162,043

1916 *March* 2. *a.* *Inches.*

Hygrometer 1 *maid.* Barometer 30,073

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″			″			+	+	
85	11 42 06,5	1,195							
			1,4425	697,5	695,5	86152,26	3,409	6,409	86161,077
83,5	11 38 44	1,39							
			1,34	697,25	695,25	86152,37	2,347	6,388	86161,090
83,5	11 46 21,25	1,30							
			1,24	698,25	696,25	86152,52	2,519	6,357	86161,396
83,2	11 53 10,5	1,19							
			1,145	701	699,0	86153,40	2,148	6,302	86162,152
83,8	10 00 40,5	1,10							
85,38									
						Mean			86161,879
						Rate of the Clock . . .			— 0,38
						Vibrations in 24 hours . .			86161,892

Hygrometer 1,5 *dry.* Barometer 30,035

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
83	1 08 36,75	1,43							
			1,38	704,25	702,25	86154,63	3,120	5,288	86163,035
82	1 20 21	1,33							
			1,285	702	700,0	86153,85	2,704	5,960	86161,820
82,9	1 32 03	1,24							
			1,1975	704	702	86154,55	2,350	5,478	86162,378
82	1 43 47	1,155							
			1,1125	704	702	86154,55	2,051	5,499	86162,103
83	1 55 31	1,07							
82,78									
						Mean			86162,334
						Rate of the Clock . . .			— 0,38
						Vibrations in 24 hours . .			86161,934

Hygrometer 16 *dry.* Barometer 30,023

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
85,5	3 23 33,75	1,41							
			1,360	696,25	694,25	86151,81	3,091	6,768	86161,009
86,5	3 35 10	1,31							
			1,365	697,5	695,5	86152,36	2,022	7,608	86161,940
86,4	3 46 47,5	1,22							
			1,175	698,0	696,0	86152,44	2,102	6,831	86161,553
85,9	3 58 25,5	1,13							
			1,0875	700,5	698,5	86153,39	1,308	6,790	86161,094
85,9	4 10 06	1,045							
86,04									
						Mean			86161,767
						Rate of the Clock . .			— 0,380
						Vibrations in 24 hours . .			86161,387

For the LENGTH of the PENDULUM.

First Set. (K.)

16th February 1822.

Rate of the Clock -0,07 | Hygrometer 0,05 moist. | Barometer 30,129 Inches.

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h ' "						+	+	
86,8	7 19 46,5	1,45	1,4155	600	488	86151,78	2,009	4,414	86158,873
86,7	7 21 25,0	1,373							
86,8	7 22 59,5	1,373	1,393	600	488	86151,78	1,918	4,347	86157,143
86	7 24 32	1,373	1,385	600,5	488,5	86158,33	1,910	4,311	86164,295
85,9	7 26 5,5	1,373	1,388	599,5	486,5	86126,01	1,914	4,300	86132,224
85,94							Mean		86148,3967
							Rate of the Clock ...		— 0,078
							Vibrations in 24 hours ...		86148,3189

Hygrometer 0,05 moist. Barometer 30,192

86,1	9 21 35,5	1,373	1,389	599,5	487,5	86161,33	1,870	4,194	86167,395
85,7	9 23 09	1,373	1,389	600,5	488,5	86851,5	1,910	4,347	86158,589
85,8	9 24 39,5	1,373	1,383	600	488	86126,69	1,910	4,311	86132,331
86	9 26 14,5	1,3	1,3805	598,5	486,5	86138,01	1,850	4,303	86145,163
85,9	9 27 39	1,333							
85,94							Mean		86150,1395
							Rate of the Clock ...		— 0,07
							Vibrations in 24 hours ...		86150,75

Hygrometer 37,05 dry. Barometer 30,109

90,6	22 7 55,75	1,3	1,35	598,75	473,75	86186,38	2,559	6,991	86,27,369
91,8	22 15 44,5	1,3	1,33	598	592	86146,62	2,707	6,389	86139,009
89,4	22 30 12,5	1,3	1,675	576	472	86143,13	1,903	5,708	86150,731
89,3	22 41 36,5	1,05	1,6105	666	474	86143,38	1,599	10,016	86037,809
90	22 57 51,5	0,975							
90,06							Mean		86137,199
							Rate of the Clock ...		— 0,07
							Vibrations in 24 hours ...		86137,199

Hygrometer 40 dry. Barometer 30,193

94,8	9 11 09,8	1,335	1,375	577,5	479,5	86144,94	1,903	10,911	86157,918
94	9 12 47	1,295	1,3975	577,75	479,75	86143,04	1,217	10,337	86157,349
94	9 26 47,5	1,15	1,1105	477,75	373,75	86143,04	0,806	10,067	86187,151
93,6	9 43 39,5	1,075	1,0875	661	479	86185,93	1,764	9,919	86137,613
93,3	9 58 43,5	1,00							
93,84							Mean		86137,507
							Rate of the Clock ...		— 0,07
							Vibrations in 24 hours ...		86137,307

16th *February* A. M.

Rate of the Clock +0,31 Hygrometer 2,35 *dry.* Jacket. Barometer 30,160

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″			″			+	+	
73,7	6 48 19,75	1,295							
			1,275	697	695	86158,98	2,862	3,539	86158,974
81	6 59 36,75	1,295							
			1,1875	696	694	86151,79	2,370	4,716	86158,746
81,3	7 11 39,75	1,15							
			1,1125	698,25	696,25	86158,67	2,509	4,842	86158,541
81,6	7 23 11	1,075							
			1,0375	696,75	694,75	86154,99	1,784	4,907	86158,661
81,6	7 34 47,75	1,09							
80,24								Mean	86158,80375
								Rate of the Clock . . .	+ 0,31
								Vibrations in 24 hours . .	86159,118

Hygrometer 5,15 *dry.* Barometer 30,192

82,5	8 43 14	1,275							
			1,225	692,5	693,5	86150,47	2,876	3,562	86158,978
83,5	8 54 40,5	1,275							
			1,225	694	692	86151,01	2,659	3,733	86159,997
83,7	9 6 00,5	1,175							
			1,1375	694,5	692,5	86151,78	2,120	3,816	86159,186
83,8	9 17 58	1,1							
			1,0625	695,5	693,5	86151,54	1,850	3,819	86159,209
83,7	9 29 30,5	1,025							
83,5								Mean	86159,1415
								Rate of the Clock . . .	+ 0,31
								Vibrations in 24 hours . .	86159,458

Hygrometer 8,3 *dry.* Barometer 30,183

83,7	9 38 42,5	1,1							
			1,3025	690,75	688,75	86149,56	3,042	3,771	86158,375
83,8	9 50 13,25	1,395							
			1,275	693	691	86150,65	2,667	3,774	86159,097
83,7	10 1 46,25	1,225							
			1,175	696,75	694,75	86151,59	2,362	3,793	86160,047
83,7	10 13 23	1,105							
			1,100	692,75	690,75	86150,56	1,982	3,816	86158,358
83,8	10 24 55,75	1,075							
82,1								Mean	86158,967
								Rate of the Clock . .	+ 0,31
								Vibrations in 24 hours . .	86159,977

Hygrometer 25,8 *dry.* Barometer 30,188

95,8	12 29 27,5	1,2							
			1,1025	678	676	86163,13	2,614	9,083	86157,397
93,4	12 40 45,5	1,125							
			1,0875	680,5	678,5	86160,07	1,928	10,095	86158,032
94	12 52 9	1,05							
			1,0325	678,5	676,5	86163,32	1,680	10,302	86157,362
95	1 3 24,5	0,975							
			0,950	678	676	86163,13	1,479	10,748	86157,253
95,8	1 14 42,5	0,925							
94,4								Mean	86157,519
								Rate of the Clock . .	+ 0,31
								Vibrations in 24 hours . .	86157,849

16th February a. m.

Hygrometer 47,33 deg. Index. Barometer 29,138

Temp.	Time of coincidences.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h ′ ″	°	°	″			+	+	
50,8	2 30 51	1,5							
			1,45	871,3	660,5	86149,66	2,413	11,315	86137,190
50,7	9 41 49,5	1,4							
			1,39	874,3	672,5	86185,50	2,306	11,315	86136,355
50,9	9 52 57	1,3							
			1,2925	871	689	86148,87	2,217	11,315	86136,337
50,7	3 4 8	1,290							
			1,1975	877,87	675,75	86144,65	2,210	11,101	86130,054
50,8	3 15 23,25	1,10							
50,56						Mean			86137,8958
						Rate of the Clock . . .			+ 0,21
						Vibrations in 24 hours . .			86137,895

17th February a. m.
Rate of the Clock—0,05. Hygrometer 4,35 deg. Barometer 29,139

61	7 56 18	1,975							
			1,2375	687,5	695,5	86150,06	2,209	8,975	86136,881
61,9	8 7 49,5	1,2							
			1,33	703	658	86153,18	2,107	8,737	86380,844
61,8	8 18 59,5	1,1							
			1,2025	699	658	86150,84	1,950	8,739	86380,089
61,3	8 31 7,5	1,095							
			0,9975	699,85	697,25	86150,58	1,856	8,937	86139,390
61,5	8 43 46,75	0,90							
61,64						Mean			86136,66475
						Rate of the Clock . . .			— 0,79
						Vibrations in 24 hours . .			86135,874

Hygrometer 4,5 deg. Barometer 29,108

91,9	9 55 54,75	1,445							
			1,375	691,5	692,5	86135,19	2,096	5,094	86130,999
88	9 7 59,85	1,305							
			1,2925	695,85	692,85	86151,46	2,019	5,101	86140,023
88,1	9 19 8,5	1,280							
			1,175	697,85	693,55	86138,17	2,068	5,094	86130,050
88,3	9 30 41,75	1,16							
			1,1	697,95	693,55	86138,17	1,968	5,093	86129,254
91,3	9 42 13	1,05							
82,16						Mean			86136,5912
						Rate of the Clock . . .			— 0,89
						Vibrations in 24 hours . .			86135,151

Hygrometer 11,33 deg. Barometer 29,158

88,6	11 53 19	1,4							
			1,35	892	891	86136,65	2,096	7,939	86101,589
89	12 4 59	1,3							
			1,25	890,55	887,85	86141,29	2,060	8,104	86100,914
89,9	12 16 52,25	1,2							
			1,1625	892,55	886,55	86147,09	2,011	8,067	86137,891
91	12 27 18,5	1,125							
			1,0875	891,37	878,37	86146,39	1,936	8,931	86137,249
90,6	12 39 5,87	1,05							
90,26						Mean			86139,9958
						Rate of the Clock . . .			— 0,91
						Vibrations in 24 hours . .			86139,05

1735 *February o. n.*

Hygrometer 11,20 *dry.* Barometer *Inches* 30,319

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″			″			+	+	
55,5	9 13 55,75	1,333							
55,4	9 37 18,75	1,05	1,952	593	681	86187	9,716	4,091	86186,007
55,6	9 59 40,87	1,2	1,793	596,19	684,19	86189,15	9,439	5,037	86186,549
57	10 20 59,75	1,185	1,695	599,08	687,08	86189,06	9,244	7,319	86186,803
55,8	10 42 18,75	1,125	1,617	601,37	689,37	86190,06	1,859	7,093	86250,000
	11 3 45,88	1,08							
56,2						Mean			86186,6410
						Rate of the Clock . . .			— 0,06
						Vibrations in 24 hours . .			86186,581

Hygrometer 25,55 *dry.* Barometer 30,048

55,4	4 13 17,5	1,45	1,4	599,85	687,85	86189,09	5,911	6,318	86189,915
55,8	4 33 49,75	1,25	1,31	598,75	686,75	86190,50	9,708	6,556	86189,865
55,6	4 56 15,5	1,08	1,2375	598,25	687,25	86189,59	9,510	6,441	86181,951
55,5	5 17 54,75	1,185	1,18	599	687,8	86188,79	1,092	6,577	86181,289
55,5	5 39 33,75	1,075							
55,5						Mean			86188,9987
						Rate of the Clock . . .			— 0,06
						Vibrations in 24 hours . .			86188,9387

1735 *February o. n.*
Rate of the Clock—0,06. Hygrometer 8,1 *dry.* Barometer 30,198

78,6	6 57 32,25	1,275	1,2375	699,5	687,5	86188,97	9,830	5,766	86189,603
78	7 19 1,75	1,2	1,25	698,75	686,75	86188,70	9,560	5,807	86189,067
78	7 40 25,5	1,2	1,2625	699	687	86188,79	9,434	5,849	86188,853
78,2	8 2 19,5	1,225	1,2375	698,75	686,75	86188,91	1,855	5,959	86189,897
77,4	8 23 2,25	1,075							
78,08						Mean			86189,418
						Rate of the Clock . .			— 0,06
						Vibrations in 24 hours . .			86189,358

Hygrometer 8,55 *dry.* Barometer 30,148

61	8 47 55,25	1,475	1,455	695,37	695,37	86191,21	3,227	4,655	86189,499
61	9 10 09,69	1,275	1,2375	693,75	691,25	86191,81	3,923	4,675	86189,896
61	9 30 36,87	1,25	1,2125	697,63	697,63	86192,01	9,609	4,666	86189,114
61,2	9 52 18,5	1,175	1,1375	696,12	696,12	86192,91	9,100	4,780	86189,810
61,4	10 13 34,69	1,2							
61,18						Mean			86190,725
						Rate of the Clock . .			— 0,06
						Vibrations in 24 hours . .			86189,665

1804 *February* 2. N.

Hygrometer 14,20 dry. Barometer 30,134

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Corrections for Arc.	Corrections for Temperature.	Vibrations in 24 hours.
	h. ′ ″			″			+	+	
83	10 43 30,3	1,43	1,4	787,62	786,68	86153,99	5,911	5,658	86161,079
83,5	10 57 58,18	1,33	1,3	899,83	899,83	86150,39	5,788	5,000	86156,179
83,8	11 9 50,75	1,33	1,3	890,57	890,57	86158,83	5,359	6,431	86197,595
83,9	11 20 17,02	1,13	1,1333	885,13	885,15	86151,41	5,096	7,059	86163,568
87,3	11 31 52,33	1,075							
88						Mean			86160,818
						Rate of the Clock . . .			— 0,58
						Vibrations in 24 hours . .			86160,152

Hygrometer 16,87 dry. Barometer 30,141

94,9	19 44 43,3	1,45	1,4	874,33	870,85	86148,31	3,953	10,821	86157,755
95,4	19 57 57,73	1,35	1,3	870,88	874,32	86148,63	3,789	10,746	86159,565
95,4	1 9 18,27	1,29	1,2933	870,85	874,35	86148,87	3,909	10,871	86162,729
95	1 20 29,02	1,275	1,2833	870,28	874,38	86144,39	3,100	11,040	86157,630
96,9	1 31 47	1,1							
93,56						Mean			86157,718
						Rate of the Clock . . .			— 0,59
						Vibrations in 24 hours . .			86157,129

Hygrometer 18,5 dry. Barometer 30,103

97	2 09 13,75	1,45	1,4	874	878	86145,08	3,811	11,950	86158,247
96,6	2 11 25,75	1,35	1,3333	873	877	86144	3,852	11,840	86156,692
95,6	2 22 48,25	1,275	1,2733	878	878	86145,12	3,859	10,845	86159,809
96	2 34 0,75	1,175	1,1333	877,25	878,35	86145,58	3,195	10,850	86158,618
95,8	2 45 10,5	1,1							
96,2						Mean			86158,618
						Rate of the Clock . . .			— 0,59
						Vibrations in 24 hours . .			86158,159

1804 *February* 2. A.
Rate of the Clock — 0,58

Hygrometer 17 dry. Barometer 30,197

81,7	9 20 27	1,44	1,4	880,75	876,75	86151,59	3,911	4,540	86160,150
81,7	9 33 3,75	1,35	1,3333	880	880	86159,42	3,923	4,570	86163,992
81,9	9 56 41,75	1,275	1,2733	881,85	883,35	86151,81	3,436	4,570	86159,809
81,7	7 10 17	1,175	1,1333	881,45	881,95	86154,79	3,195	4,598	86164,398
81,8	7 21 37,95	1,1							
81,7						Mean			86160,150
						Rate of the Clock . . .			— 0,64
						Vibrations in 24 hours . .			86159,510

1803 *February* 2. n.

Hygrometer 8,4 *deg.* Barometer 30,334 *Inches.*

Temp.	Time of coincidence. h. — ′	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc. +	Correction for Temperature. +	Vibrations in 24 hours.
91,8	9 49 11,35	1,305	1,4805	690,75	695,75	86134,63	5,504	3,376	86160,510
87,7	9 58 47,5	1,8	1,35	697,75	695,75	86158,35	5,080	3,808	86167,350
88,4	10 11 55,55	1,5	1,45	697,35	695,55	86158,8	5,360	3,807	86167,017
82,6	10 23 0,9	1,5	1,3815	697,9	695,9	86158,4	7,554	3,372	86169,326
88,9	10 28 10,5	1,155							
86,20						Mean			86166,1955
						Rate of the Clock . . .			— 1,04
						Vibrations in 24 hours . .			86139,335

Hygrometer 13,95 *deg.* Barometer 30,144

86,5	10 51 34,5	1,5	1,35	695,75	695,75	86158,99	5,360	4,450	86250,810
90,6	11 3 8,05	1,2	1,1005	693	695	86158,55	6,214	6,905	86138,780
87	11 14 41,05	1,105	1,0825	691,97	695,97	86158,05	5,939	7,466	86158,454
88,3	11 26 12,89	1,05	1,0185	691,18	695,18	86149,97	1,680	8,559	86158,709
90,8	11 37 45,75	0,975							
87,1						Mean			86160,52915
						Rate of the Clock . . .			— 0,84
						Vibrations in 24 hours . .			86158,693

Hygrometer 84,55 *deg.* Barometer 30,148

90,5	19 51 5,5	1,175	1,1575	678,85	676,55	86144,53	8,180	12,936	86258,306
90	18 10 39,25	1,3	1,0995	681	679	86146,55	1,680	21,185	86159,995
88,6	1 7 47,25	1,095	1,09	678	676	86143,13	1,626	11,736	86158,104
87	1 19 3,75	0,975	0,9775	679,55	677,55	86145,53	1,440	11,340	86158,510
87,8	1 30 15,6	0,9							
90,8						Mean			86159,61395
						Rate of the Clock . .			— 0,98
						Vibrations in 24 hours			86157,973

Hygrometer 51,5 *deg.* Barometer 30,110

91,6	9 24 46,87	1,455	1,495	677,26	675,26	86144,09	2,707	10,819	86158,559
91,3	9 46 0,75	1,375	1,355	680	678	86145,56	2,928	10,173	86158,909
93,8	9 57 16,75	1,375	1,355	680	680	86146,65	2,439	10,094	86159,183
93,7	10 8 45,75	1,375	1,350	680,95	680,95	86144,79	2,167	9,711	86156,668
89	10 20 11	1,195							
93,69						Mean			86158,51785
						Rate of the Clock . .			— 0,68
						Vibrations in 24 hours			86158,177

28th *February* a. v.
Rate of the Clock—8,56

Hygrometer 19,3 dry. Barometer 30,134 *Inches.*

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Corrections for Arc.	Corrections for Temperature.	Vibrations in 24 hours.
	h. ′ ″						+	+	
81,5	7 48 10,75	1,4							
			1,39	870,75	991,25	86155,05	0,561	4,589	86160,595
81,8	7 55 00,5	1,3							
			1,25	899,25	958,25	86158,52	0,468	5,187	86163,177
82,3	8 7 00,75	1,2							
			1,15	930,5	927,5	86152,97	0,367	5,224	86158,561
98,5	8 19 8,25	1,1							
			1,0697	960,75	897,25	86158,05	1,850	5,235	86165,135
99,4	8 30 48	1,095							
82,1						Mean			86160,417
						Rate of the Clock . . .			— 0,560
						Vibrations in 24 hours . .			86159,857

Hygrometer 18,8 dry. Barometer 30,135

93,5	8 49 15,5	1,5							
			1,43	891,50	905,85	86151,46	5,445	5,189	86162,097
93,8	9 33 48,75	1,4							
			1,33	927,25	955,75	86159,35	5,066	5,195	86169,595
93,5	9 5 00,5	1,3							
			1,23	960	900	86154,93	4,680	5,188	86161,798
93,2	9 17 0,5	1,2							
			1,1695	984	939	86151,81	3,914	5,118	86158,842
89	9 28 43,5	1,135							
93,2						Mean			86160,898
						Rate of the Clock . . .			— 0,56
						Vibrations in 24 hours . .			86160,668

Hygrometer 24,05 dry. Barometer 30,135

91	11 49 37,87	1,6							
			1,55	690,88	679,55	86165,91	5,776	5,671	86177,757
90	12 1 19,5	1,5							
			1,45	864	680	86147,37	5,115	5,681	86158,166
89,8	12 16 42,5	1,4							
			1,35	865	681	86147	4,760	5,371	86158,131
89,8	12 31 5,5	1,3							
			1,25	863	684	86147	4,409	5,181	86157,724
89,8	12 55 25,5	1,2							
89,72						Mean			86158,8503
						Rate of the Clock . . .			— 0,56
						Vibrations in 24 hours . .			86157,870

Hygrometer 31,75 dry. Barometer 30,130

94	1 45 56,75	1,475							
			1,385	823,75	873,25	86164,98	5,810	10,150	86158,980
94	1 59 44,5	1,475							
			1,295	878	870	86165,15	5,297	10,215	86159,670
93,5	2 4 0,5	1,275							
			1,205	896,25	871,25	86144,45	4,808	10,295	86137,231
93,5	2 18 18,75	1,075							
			1,035	838,25	877,87	86145,85	2,400	10,647	86138,906
95,4	2 30 58,60	1,035							
91,3						Mean			86158,38775
						Rate of the Clock . . .			— 0,56
						Vibrations in 24 hours . .			86157,827

20th *February* A. M.

Hygrometer 32 dry. Barometer *Inches.* 30,097

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″			″			+	+	
88,3	3 57 52,75	1,475							
			1,425	682	680	86146,63	3,397	8,835	86158,396
94,6	4 9 14,75	1,375							
			1,325	685,5	683,8	86148,03	2,876	8,756	86159,662
89,8	4 20 40,62	1,275							
			1,2375	690,38	688,38	86149,7	2,607	8,058	86160,365
88,3	4 32 11	1,2							
			1,1625	690,5	688,5	86149,74	2,214	7,308	86159,462
87,2	4 43 41,5	1,125							
89,04									

Mean	86159,67125
Rate of the Clock . . .	— 0,59
Vibrations in 24 hours . .	86159,911

For the LENGTH of the PENDULUM.

Second Set. (*B.*)

1803. *18th February a. s.*

Rate of the Clock 4',95 — Hygrometer 14,55 *dry.* — *Inches.* Barometer 30,147

Temp.	Time of coincidence.	Arc of vibration.	Mean Arcs	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ' "	°	°	"			+	+	
85,6	8 55 44,5	1,575							
85,8	9 9 19,05	1,398	1,500	691,75	895,75	86151,09	1,134	4,596	86160,899
84,2	9 13 56,05	1,8	1,4895	697,87	889,87	86158,99	2,504	4,091	86160,093
82	9 18 35,75	1,5	1,39	690,13	897,13	86158,83	2,060	3,033	86160,849
82,2	9 27 16,5	1,8	1,55	700,25	888,75	86153,41	2,302	5,116	86161,088
84,66									

Mean 86160,7383
Rate of the Clock . . . + 0,29
Vibrations in 24 hours . 86161,145

Hygrometer 19,55 *dry.* — Barometer 30,169

83,7	10 16 1,75	1,5	1,4825	700	688	86153,14	2,288	5,016	86160,388
84,2	10 37 41,75	1,575	1,3875	654,95	692,75	86151,18	2,021	6,109	86160,270
85,8	11 2 18	1,8	1,35	691,69	692,07	86152,82	2,369	5,704	86160,194
86,1	11 20 55,69	1,8	1,5495	694,5	690,5	86150,47	2,914	7,191	86159,874
85,39									

Mean 86160,99105
Rate of the Clock . . . + 0,29
Vibrations in 24 hours . 86161,365

Hygrometer 30,8 *dry.* — Barometer 30,160

93,2	12 40 46,5	1,5	1,4575	699,69	690,09	86146,86	2,286	9,799	86159,975
93,5	12 58 0,18	1,575	1,395	694,89	692,39	86147,37	2,829	9,844	86160,030
93,5	1 3 35,5	1,575	1,335	694,33	693,75	86149,9	2,459	9,517	86160,876
92,7	1 14 58,85	1,175	1,183	695,5	684,5	86145,14	2,074	9,854	86159,068
92,7									

Mean 86160,13789
Rate of the Clock . . . + 0,29
Vibrations in 24 hours . 86160,967

Hygrometer 37,3 *dry.* — Barometer 30,113

93,5	2 55 28,75	1,65	1,60	676,75	673,25	86144,66	4,104	9,999	86158,758
93,2	3 45 56,5	1,55	1,4875	679,5	677,5	86145,69	3,893	9,350	86159,063
94,8	3 59 15	1,425	1,3975	678,5	678,5	86145,39	3,095	8,687	86156,158
95	4 9 32,5	1,35	1,30	691	689	86146,63	2,760	8,606	86158,997
93,5	4 40 53,5	1,85							
93,98									

Mean 86159,904
Rate of the Clock . . . + 0,29
Vibrations in 24 hours . 86159,194

22d February a. m.
Rate of the Clock—0,80

Hygrometer 16,5 *dry.* Inches. Barometer 30,145

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″			″			+	+	
80,7	7 34 53,75	1,325							
			1,275	700,5	698,5	86153,72	2,865	4,560	86160,372
81	7 46 34,85	1,325							
			1,1875	701,25	699,25	86153,58	2,310	4,710	86160,000
81,2	7 58 15,5	1,15							
			1,15	700,25	700,25	86157,03	1,999	4,780	86160,702
81,3	8 9 17,75	1,05							
			1,0125	702	700	86153,85	1,080	4,843	86160,373
81,6	8 21 20,75	0,975							
81,18								Mean	86160,38575
								Rate of the Clock . . .	— 0,80
								Vibrations in 24 hours . .	86159,006

Hygrometer 17,7 *dry.* Barometer 30,148

81,8	8 40 00,5	1,425							
			1,375	699,25	696,25	86152,92	3,098	5,074	86160,004
82,2	8 51 39,75	1,325							
			1,275	702	700	86157,85	2,663	5,182	86161,695
82,3	9 3 20,75	1,225							
			1,175	697,87	695,87	86152,39	2,299	5,309	86159,961
82,5	9 14 58,62	1,125							
			1,0875	703	701	86154,80	1,938	5,351	86161,480
82,5	9 26 41,62	1,05							
82,32								Mean	86160,01075
								Rate of the Clock . . .	— 0,80
								Vibrations in 24 hours . .	86160,07

Hygrometer 37,45 *dry.* Barometer 30,129

89,2	11 53 59,37	1,375							
			1,325	698,25	685,25	86148,98	2,876	8,462	86160,915
90,8	11 45 37,5	1,375							
			1,225	698,25	685,25	86149,92	2,432	8,598	86160,375
91,7	11 56 55,75	1,175							
			1,195	687,75	685,75	86149,74	2,074	9,609	86160,614
91,8	12 8 22,5	1,075							
			1,0375	687,25	685,25	86148,56	1,734	9,004	86159,298
92	12 19 50,75	1,000							
91,3								Mean	86160,049
								Rate of the Clock . .	— 0,80
								Vibrations in 24 hours .	86159,139

Hygrometer 55,95 *dry.* Barometer 30,078

95,8	1 59 48,75	1,425							
			1,275	675,87	673,87	86144,53	3,098	11,019	86158,447
95,3	2 1 4,62	1,325							
			1,275	681	679	86146,25	2,663	10,934	86159,847
96,4	2 12 25,62	1,225							
			1,1875	679,25	677,25	86145,64	2,310	11,083	86159,033
95	2 23 45	1,15							
			1,1125	680,25	680,25	86145,72	2,028	10,784	86159,492
94,8	2 35 7,85	1,075							
95,06								Mean	86159,05475
								Rate of the Clock . .	— 0,80
								Vibrations in 24 hours .	86158,313

Old February s. n.

Hygrometer 53,1 deg. Barometer 30,054 In. Lat.

Temp.	Time of observation	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature	Vibrations in 24 hours.
	h. ′ ″						+	+	
91	4 30 11,75	1,385							
			1,475	881	120	86346,93	3,560	9,992	86130,856
90,6	4 31 32,75	1,435							
			1,375	880,75	680,75	86340,91	3,098	9,991	86135,999
91	4 32 53,5	1,395							
			1,375	880,5	685,5	86347,09	3,098	9,998	86139,993
90,8	4 44 51	1,205							
			1,3975	887,5	695,5	86359,63	3,240	7,010	86148,939
90,8	4 55 48,5	1,19							
90,8						Mean			86139,953
						Rate of the Clock . . .			— 0,09
						Vibrations in 24 hours . .			86139,953

Old February s. n.
Rate of the Clock—1,28 Hygrometer 90,5 deg. Barometer 30,080

90,9	6 21 18,75	1,5							
			1,45	699	697	86142,79	3,445	6,947	86130,299
90,7	6 23 38,75	1,4							
			1,3375	700,5	700,5	86134,09	3,021	6,947	86131,699
90,9	6 43 41,25	1,375							
			1,3375	700,75	698,75	86133,61	2,607	6,951	86132,049
91	6 57 58	1,3							
			1,25	702,5	700,5	86134,09	2,197	6,958	86107,787
91,2	7 9 4,5	1,1							
90,9						Mean			86130,7423
						Rate of the Clock . . .			— 1,24
						Vibrations in 24 hours . .			86130,007

Hygrometer 95,18 deg. Barometer 30,189

88,7	8 23 8,5	1,275							
			1,2125	701,25	699,25	86133,66	2,033	5,899	86101,780
88,8	8 45 43,75	1,05							
			1,20	702,17	699,17	86133,58	2,010	5,615	86101,303
89,8	9 58 91,87	1,15							
			1,1998	704,36	702,39	86134,68	2,029	5,437	86102,163
93	9 10 8,25	1,075							
			1,0375	704,5	702,5	86134,79	1,708	5,499	86101,993
93	9 21 25,75	1,00							
89,50						Mean			86101,85175
						Rate of the Clock . . .			— 1,24
						Vibrations in 24 hours . .			86100,179

Hygrometer 76,8 deg. Barometer 30,125

84,6	10 49 57,5	1,4							
			1,35	700,25	698,25	86137,23	2,580	4,595	86102,993
84,8	10 54 30,75	1,3							
			1,25	699	696	86133,44	2,389	4,708	86101,300
85,8	11 6 15,75	1,2							
			1,15	699,75	697,75	86135,65	2,197	4,879	86102,190
87,8	11 17 49,5	1,1							
			1,05	700	698	86135,14	1,806	4,894	86102,360
85,8	11 27 25,5	1,0							
86,00						Mean			86102,09833
						Rate of the Clock . . .			— 1,24
						Vibrations in 24 hours . .			86100,741

16th February o. s.

Hygrometer 51,25 deg. Barometer *Inches.* 30,083

Temp.	Time of coincidence. h. ′ ″	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc. +	Correction for Temperature. +	Vibrations in 24 hours.
93,0	19 30 13,75	1,205							
93,0	1 3 26,75	1,2	1,2025	693	693	86148,47	9,513	9,721	86080,553
94,0	1 13 4,3	1,195	1,1975	693,75	693,75	86139,01	9,514	10,099	86100,249
95,0	1 22 37,75	1,185	1,0975	693,25	693,25	86147,00	9,508	10,100	86129,607
95,0	1 32 17,75	1,05	1,0125	694,75	694,75	86146,55	9,090	11,020	86150,441
97,0	1 37 45,5	0,975							
98,7						Mean . . . . . Rate of the Clock . . . Vibrations in 24 hours . .			86107,070 — 1,34 86138,07

Hygrometer 63,6 deg. Barometer 30,059

97,5	2 43 17,5	1,225	1,205	677,75	675,75	86185,56	9,078	11,959	86139,682
97,5	2 54 30,25	1,175	1,2225	674,5	672,5	86143,59	9,087	11,873	86139,809
97,7	3 5 53,75	1,1	1,15	668	668	86143,69	9,107	11,849	86139,809
99,4	3 17 13,75	1,1	1,0975	669	669	86146,03	9,090	11,849	86139,809
95,5	3 28 35,75	1,025							
98,29						Mean . . . . . Rate of the Clock . . . Vibrations in 24 hours . .			86140,1055 — 1,21 86138,195

25th February o. s.
Rate of the Clock—0,75.

Hygrometer 1,13 moist. Barometer 30,059

79	8 22 2,5	1,145	1,1875	703	700	86158,85	9,055	9,869	86180,827
78,4	8 33 43,5	1,23	1,20	702,75	700,75	86138,13	9,703	9,954	86161,958
78,2	8 45 21,25	1,05	1,09	701,5	699,5	86155,07	9,358	9,849	86156,978
79	8 57 10,75	1,15	1,19	702	702	86159,39	9,060	9,807	86161,259
79	9 8 58,75	1,05							
78,56						Mean . . . . . Rate of the Clock . . Vibrations in 24 hours .			86161,96875 — 0,75 86161,217

Hygrometer 0,8 dry. Barometer 30,128

91,8	10 18 21	1,13	1,09	699,25	697,25	86159,56	9,211	8,934	86163,709
88,3	10 29 15,25	1,25	1,20	696,75	694,75	86151,89	9,710	8,141	86159,209
86,7	10 41 59	1,05	1,0925	708,75	708,25	86158,81	9,109	8,512	86161,760
90,8	10 53 34,75	1,175	1,159	704,75	703,75	86154,81	9,104	8,613	86161,559
81,8	11 5 15,5	1,055							
87,39						Mean . . . . . Rate of the Clock . . Vibrations in 24 hours .			86161,0059 — 0,75 86160,258

23th February a. m.

Hygrometer 18,8 *deg.* — Inches. Barometer 30,078

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″			″			+	+	
83,8	12 17 5,37	1,2							
			1,35	697,38	693,35	86152,32	2,560	5,983	86152,735
84,5	12 28 42,75	1,2							
			1,1025	697,5	693,5	86152,75	2,214	6,176	86160,649
84,7	12 40 90,95	1,125							
			1,0875	696,37	691,37	86151,89	1,938	6,981	86160,579
85	12 51 50,62	1,05							
			1,2125	697,75	693,75	86152,55	1,680	6,451	86160,481
85½	1 3 34,37	0,975							
84,7								Mean	86160,46875
								Rate of the Clock . . .	— 0,73
								Vibrations in 24 hours . .	86159,738

Hygrometer 35,05 *deg.* — Barometer 30,045

89,8	2 21 11,25	1,4							
			1,35	688,75	680,75	86149,11	2,980	8,248	86160,344
89,2	2 32 40	1,2							
			1,25	687,5	683,5	86148,65	2,560	8,270	86159,480
89,9	2 44 7,5	1,2							
			1,1025	688,5	680,5	86149,02	2,214	8,296	86159,456
89,8	2 55 36	1,125							
			1,0875	689	687	86149,59	1,938	8,373	86159,512
89,9	3 7 5	1,05							
89,7								Mean	86159,74375
								Rate of the Clock . . .	— 0,73
								Vibrations in 24 hours . .	86159,019

Hygrometer 41,35 *deg.* — Barometer 30,041

89,6	4 14 47,5	1,4							
			1,35	697,25	693,25	86148,58	2,980	8,161	86159,710
89	4 29 14,75	1,3							
			1,25	688,75	687,75	86149,47	2,560	7,898	86159,984
88,8	4 37 42,5	1,2							
			1,1025	690,75	688,75	86149,54	2,214	7,656	86159,715
87,4	4 49 15,25	1,125							
			1,0875	692,50	690,50	86150,49	1,938	8,079	86159,407
88,0	5 00 47,75	1,05							
88,08								Mean	86159,68875
								Rate of the Clock . . .	— 0,73
								Vibrations in 24 hours . .	86159,67

26th February a. m.
Rate of the Clock — 0,75

Hygrometer 8,7 *deg.* — Barometer 30,023

80,8	6 31 43,5	1,05							
			1,1025	705	703	86151,89	2,409	4,568	86161,967
80,8	6 43 30,5	1,175							
			1,1375	704	699	86152,49	2,140	4,505	86160,715
80,5	6 55 11,5	1,1							
			1,05	704	700	86154,58	1,800	4,484	86160,640
80,7	7 6 55,5	1,0							
			0,975	706,25	708,25	86155,33	1,557	4,547	86161,428
80,8	7 18 41,75	0,95							
80,72								Mean	86161,084
								Rate of the Clock . . .	— 0,73
								Vibrations in 24 hours . .	86160,314

1804 *February* 1. *s.*

Hygrometer 12,33 deg. Barometer 29,614 Inches.

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc. +	Correction for Temperature. +	Vibrations in 24 hours
82,5	h. — ′ — ″ 8 30 30,5	1,4							
82,5	8 47 5,5	1,375	1,3875	677	637	86128,79	0,031	5,351	86161,072
82,5	8 58 41,25	1,4	1,375	680,25	637,93	86128,88	0,027	5,444	86160,951
82,5	9 10 17,5	1,3	1,35	703,75	700,75	86134,11	0,187	5,844	86161,291
82,5	9 29 11,25	1	1,05	734,75	707,89	86128,62	1,800	5,371	86161,807
82,7						Mean			86161,28275
						Rate of the Clock . . .			— 0,75
						Vibrations in 24 hours . .			86160,532

Hygrometer 11,85 deg. Barometer 30,013

83,7	10 49 27,5	1,375	1,375	697	658	86158,08	0,078	5,801	86163,957
84,5	11 7 15,5	1,375	1,375	697,5	658,5	86158,35	0,150	5,778	86163,985
85	11 28 38	1,375	1,375	694,63	656,64	86151,82	0,192	5,758	86159,956
86	11 46 40,63	1,3	1,3625	691,34	653,86	86151,08	1,830	5,679	86160,509
87	11 59 9,5	1,375							
85,25						Mean			86160,57965
						Rate of the Clock . . .			— 0,75
						Vibrations in 24 hours . .			86159,789

Hygrometer 48,8 deg. Barometer 30,031

90	12 41 15,63	1,3	1,3625	683,38	640,59	86147,69	0,032	5,593	86159,315
91	12 55 38,5	1,375	1,375	683	640	86147,74	0,032	5,547	86159,319
93	1 7 3,5	1,375	1,375	685,19	685,19	86147,78	1,538	0,083	86159,101
94,5	1 28 29,69	1,05	1,0125	683,28	641,28	86146,03	1,090	10,300	86158,073
91,9	1 55 39	0,675				Mean			86158,1195
						Rate of the Clock . .			— 0,75
						Vibrations in 24 hours .			86158,369

Hygrometer 59,25 deg. Barometer 30,013

93,9	2 29 38,75	1,375	1,3875	679,5	677,5	86148,69	0,027	10,714	86159,041
93	2 47 50,25	1,4	1,375	680	678	86148,88	0,187	10,017	86159,088
93,2	3 7 19,63	1,1	1,2625	681	679	86148,03	1,830	10,101	86158,961
93,3	3 19 31,25	1,025	1,050	683,25	681,95	86147,09	1,028	10,296	86159,155
94,0	3 33 34,5	0,675							
93,69						Mean			86158,80725
						Rate of the Clock . .			— 0,75
						Vibrations in 24 hours .			86158,107

For the LENGTH *of the* PENDULUM.

Vienna Sect. (B.)

1823 1st March a. m.

Rate of the Clock—0,15 Hygrometer 5,33 moist. *Inches.* Barometer 29,039

Temp.	Time of coincidence.	Arc of Vibration.	Mean Arc.	Interval in seconds.	Number of Vibrations.	Observed Vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. m. s.						+	+	
77,0	6 55 20,5	1,253							
75,5	7 7 38,5	1,273	1,263	738	738	86134,55	0,576	3,593	86191,291
79,7	7 19 2	1,173	1,223	709,5	701,5	86155,81	0,439	4,701	86161,950
79,8	7 30 43,91	1,073	1,123	705,71	703,93	86154,78	0,374	4,781	86161,176
80,8	7 41 30,75	0,825	1,023	705,1	706,9	86153,78	1,060	4,730	86161,609
78,09						Mean			86161,545
						Rate of the Clock . . .			— 0,15
						Vibrations in 24 hours . .			86161,395

Hygrometer 8,33 dry. Barometer 29,055

80,8	8 35 42,5	1,449							
80,9	9 7 50,5	1,325	1,387	701	699	86150,49	1,006	4,668	86189,130
80,5	9 19 16,55	1,205	1,265	699,75	697,75	86153,05	0,913	4,569	86189,981
81	9 30 53,87	1,109	1,157	703,03	701,03	86158,41	0,761	4,611	86191,952
81,1	9 42 30,75	1,01	1,059	702,68	700,68	86154,13	1,028	4,749	86189,930
80,69						Mean			86160,249
						Rate of the Clock . . .			— 0,15
						Vibrations in 24 hours . .			86160,729

Hygrometer 11,8 dry. Barometer 29,019

82,2	10 48 31,25	1,51							
82,8	10 59 39,75	1,41	1,46	693,8	695,5	86151,34	3,097	5,597	86197,144
83,5	11 11 58,85	1,295	1,353	698,5	697,5	86151,81	2,995	5,595	86200,251
84,9	11 23 11,75	1,19	1,243	696,5	695,5	86151,9	2,714	6,039	86200,653
83,6	11 34 48,75	1,15	1,17	695	693	86151,37	2,559	6,430	86200,359
83,53						Mean			86200,3987
						Rate of the Clock . . .			— 0,15
						Vibrations in 24 hours . .			86200,85

Hygrometer 10,5 dry. Barometer 29,025

82,3	12 58 59,05	1,419							
82	1 8 16,87	1,305	1,362	693,75	693,75	86147,81	3,098	9,972	86186,130
81,5	1 19 33,5	1,195	1,250	693,13	691,13	86147,85	2,963	9,553	86186,549
84	1 30 50,5	1,15	1,173	694	694	86147,37	2,310	10,048	86186,796
84,9	1 41 5,5	1,075	1,113	694	694	86147,37	2,028	10,396	86186,297
82,84						Mean			86186,6937
						Rate of the Clock . . .			— 0,15
						Vibrations in 24 hours . .			86186,849

1st March a. m.

Hygrometer 53,9 dry. Barometer 29,659 Inches.

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	° ' "	°		"			+	+	
83	1 49 18,50	1,505							
84,5	2 09 25,75	1,425	1,473	577,5	623,5	86134,94	2,165	10,201	86138,660
84,1	2 11 34,75	1,5	1,5025	581	619	86146,95	2,199	10,079	86159,371
84,8	2 33 19	1,5	1,51	581,25	619,25	86146,51	2,209	10,203	86158,993
84,6	2 34 28,25	1,495	1,4975	581,25	619,25	86146,51	2,209	10,203	86158,993
84,6	2 54 28,25	1,485	1,4925	581,37	619,37	86148,09	2,174	10,189	86160,053
84,5								Mean	86160,194[2]
								Rate of the Clock . . .	— 0,15
								Vibrations in 24 hours . .	86160,039

31 March a. m.
Rate of the Clock + 0,35 Hygrometer 59,6 moist. Barometer 30,275

76,4	5 17 18	1,575							
76,7	5 29 1,25	1,5	1,5375	703,25	781,25	86134,98	2,951	8,731	86139,989
77,8	5 49 46,75	1,5	1,5	703,5	699,5	86153,57	2,960	8,643	86139,170
77,8	5 50 37,25	1,5	1,49	703	702	86134,89	2,167	8,273	86160,889
78,9	6 8 11,5	1,485	1,5075	703,75	701,75	86134,50	2,350	8,400	86158,750
77,59								Mean	86159,2707
								Rate of the Clock . . .	+ 0,35
								Vibrations in 24 hours . .	86160,203

Hygrometer 9,8 moist. Barometer 30,000

80,3	10 30 11,5	1,375	1,525	659,37	656,37	86159,37	2,870	4,899	86169,760
81,75	11 1 30,87	1,475	1,521	660,38	658,38	86153,59	2,459	4,900	86160,009
82,2	11 19 50,25	1,525	1,525	660,25	657,25	86150,59	2,876	5,370	86160,795
83,3	11 39 45,5	1,475	1,5375	661,87	655,87	86159,59	2,768	5,737	86158,907
83	11 59 53,37	1							
80,97								Mean	86160,7848
								Rate of the Clock . .	+ 0,35
								Vibrations in 24 hours .	86161,134

Hygrometer 89,45 dry. Barometer 30,051

85,5	18 33 43,5	1,475	1,4125	654,19	660,19	86159,53	2,509	5,770	86160,175
85,8	1 5 13,68	1,35	1,39	653,13	661,13	86150,7	2,560	5,682	86160,138
85,8	1 25 14,75	1,45	1,3525	653,75	661,75	86151,09	2,110	5,574	86160,077
85,5	1 38 35,5	1,375	1,245	656	654	86155,71	2,074	5,298	86160,332
85	1 59 3,5	1,075							
85,47								Mean	86160,3[7]1
								Rate of the Clock . .	+ 0,35
								Vibrations in 24 hours .	86160,721

24 *March* o. s.

Hygrometer 25,5 deg. Barometer 30,518 *Inches.*

Temp.	Time of coincidence, h. ′ ″	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Corrections for Arc. −	Corrections for Temperature. +	Vibrations in 24 hours.
68,8	3 1 47,3	1,45	1,45	697	603	86148,87	3,211	7,203	86139,858
69	3 13 14,3	1,35	1,39	698,5	687,5	86189,29	2,709	8,000	86180,253
68,5	3 24 44	1,27	1,3127	697,75	687,75	86159,87	2,309	8,148	86149,932
69	3 36 13,75	1,175	1,1375	695,75	687,75	86185,59	1,959	8,415	86176,953
68,8	3 47 43	1,1							
68,81						Mean			86165,9063
						Rate of the Clock . . .			+ 0,53
						Vibrations in 24 hours . .			86260,378

Hygrometer 27,25 deg. Barometer 30,518

66,8	5 7 43,75	1,35	1,3412	695,37	687,81	86149,59	2,734	7,709	86139,858
66,8	5 19 10,87	1,275	1,30	695,5	690,5	86150,47	2,209	8,003	86139,721
65,8	5 30 45,87	1,175	1,1375	695,63	690,63	86258,98	2,109	8,409	86150,359
66,4	5 42 15,75	1,1	1,0906	697,25	690,63	86232,17	1,809	8,267	86228,467
66,8	5 53 56	1,095							
66,84						Mean			86150,747
						Rate of the Clock . . .			+ 0,53
						Vibrations in 24 hours . .			86187,277

28 *March* o. s.
Rate of the Clock 0,53

Hygrometer 23 deg. Barometer 30,041

77,8	7 13 13,75	1,8	1,35	707,75	778,75	86155,65	3,986	3,194	86167,858
77,7	7 25 1,5	1,7	1,35	708,5	708,5	86161,3	3,569	3,194	86161,934
77,8	7 36 50	1,6	1,35	711,69	708,69	86137,17	3,167	3,130	86167,187
77,8	7 48 41,63	1,5	1,3875	711,13	708,13	86167,81	2,807	3,134	86168,097
77,7	8 00 29,75	1,35							
77,99						Mean			86167,117
						Rate of the Clock . . .			− 0,53
						Vibrations in 24 hours . .			86161,963

Hygrometer 19,25 deg. Barometer 30,037

79	8 14 8,5	1,275	1,305	709,29	704,08	86185,23	2,876	2,496	86183,850
79,2	8 25 35,75	1,275	1,303	708,87	705,87	86182,83	2,450	2,453	86182,842
79,6	8 37 44,62	1,175	1,1375	707,29	707,29	86188,38	2,121	2,268	86188,486
79,2	8 49 31,5	1,1	1,08	709	709,5	86184,62	1,806	2,040	86187,408
79,8	9 0 51,5	1							
79,78						Mean			86187,1918
						Rate of the Clock . . .			− 0,53
						Vibrations in 24 hours . .			86161,501

6/7 *Mars* 1. v.

Hygromètre 97,33 cent. Baromètre 30,029

Temps.	Temps d'oscillation.	Arc d'oscillation.	Minutes Bifs.	Intervalle en secondes.	Nombre d'oscillations.	Observé à l'équateur en 24 heures.	Corrections En Arc.	Corrections En Température.	Y équivalent en 24 heures.
	h. m. s.						+	+	
89,9	10 59 30,57	1,313	1,2925	859,86	697,86	86155,1	0,385	3,886	86161,549
83,9	11 7 16,52	1,25	1,2925	899,85	697,85	86158,85	0,430	3,864	86163,561
88,4	11 15 49,5	1,275	1,2875	899	697	86159,79	0,390	3,870	86163,960
86,3	11 20 15,5	1,1	1,2925	703	698	86158,14	1,250	3,350	86161,243
84,8	11 24 8,5	1,095							
86,07						Mean			86161,32875
						Rate of the Clock . . .			+ 0,25
						Y équivalent en 24 heures . .			86161,408

Hygromètre 1,1 dgr. Baromètre 30,023

85,6	9 8 20,19	1,4	1,25	899,85	691,85	86156,74	0,856	4,360	86160,966
85,6	9 18 12,52	1,3	1,25	899,13	696,13	86161,05	0,500	4,042	86165,592
88	9 27 48,5	1,3	1,2925	899	674	86161,77	0,974	4,766	86166,508
85,8	9 39 30,5	1,255	1,2875	899,5	699,5	86161,19	1,039	4,379	86166,608
86,3	9 50 07	1,08							
86,66						Mean			86165,918
						Rate of the Clock . . .			+ 0,25
						Y équivalent en 24 heures . .			86166,168

Hygromètre 4,88 dgr. Baromètre 30,011

92,7	8 18 26,73	1,4	1,25	697,69	699,69	86158,5	0,980	5,116	86165,614
89	8 29 4,27	1,3	1,2925	699,86	694,86	86158,68	0,918	5,024	86165,096
91,3	8 41 41,83	1,305	1,2975	700	700	86158,93	0,810	4,991	86165,131
91,9	8 53 23,75	1,35	1,2925	699,85	699,85	86158,83	1,008	5,074	86166,912
89,0	9 5 5,5	1,075							
91,16						Mean			86166,38366
						Rate of the Clock . .			+ 0,03
						Y équivalent en 24 heures .			86166,653

8/9 *Mars* 1. v.

Rate of the Clock=0,37. Hygromètre 8,3 cent. Baromètre 30,155

79,7	6 49 14	1,475	1,295	899,5	697,5	86158,87	3,307	4,788	86163,465
80	6 58 3,5	1,475	1,305	899,25	700,75	86158,31	2,976	4,559	86165,859
83	7 9 46,83	1,375	1,295	900,5	701,5	86158,37	3,419	4,378	86166,169
80,5	7 21 03,75	1,375	1,295	900,75	700,75	86158,13	3,774	4,326	86166,230
80,3	7 32 15,5	1,375							
80,68						Mean			86165,093
						Rate of the Clock . .			— 0,37
						Y équivalent en 24 heures .			86160,363

5th *March a. st.*

Hygrometer 8,8 deg. Barometer 30,130 *Inches.*

Temp.	Time of coincidence.	Arcs of vibrations.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc. +	Correction for Temperature. +	Vibrations in 24 hours.
	h. ′ ″								
81,5	8 58 40	1,705							
81,5	9 4 55,5	1,695	1,675	703,5	703,5	86258,57	2,053	4,091	86167,574
81,5	9 10 8,5	1,655	1,535	703	703	86154,90	2,009	4,091	86165,143
81,5	9 17 55,19	1,55	1,095	706,69	706,69	86455,85	1,926	4,091	86169,819
81,5	9 20 43,5	1,35	1,00	708,38	706,38	86256,8	1,828	4,091	86165,429
81,5								Mean	86167,74005
								Rate of the Clock . . .	— 0,58
								Vibrations in 24 hours . .	86161,778

Hygrometer 15,1 deg. Barometer 30,145

83	10 55 16,5	1,8	1,3975	707	701	86154,9	2,033	3,689	86165,630
83	11 6 29,5	1,575	1,355	704	707	86154,55	2,130	3,697	86169,856
83,5	11 15 45,5	1,175	1,075	704	703	86158,55	2,170	3,720	86169,000
83,5	11 20 27,5	1,3	1,0895	703	704	86155,94	1,850	3,745	86165,533
83,5	11 45 13,5	1,095							
83,72								Mean	86165,51975
								Rate of the Clock . . .	— 0,57
								Vibrations in 24 hours . .	86161,799

Hygrometer 17,15 deg. Barometer 30,098

88,5	12 50 44,5	1,575	1,375	700,95	699,95	86155,89	2,070	3,957	86167,909
88,5	1 11 55,75	1,575	1,395	703,33	699,95	86155,58	2,159	3,899	86161,536
88,5	1 33 8	1,375	1,195	701,5	699,5	86155,87	2,074	3,745	86161,687
88	1 58 47,5	1,175	1,0375	703,52	701,61	86158,81	1,764	3,649	86167,883
88,5	2 40 33,18	1							
88,36								Mean	86163,84969
								Rate of the Clock . . .	— 0,57
								Vibrations in 24 hours . .	86161,999

Hygrometer 21,85 deg. Barometer 30,048

93	3 30 19,83	1,555	1,375	697,25	695,75	86159,81	2,083	4,306	86167,420
93,5	3 7 55	1,375	1,1975	699,5	698,5	86155,6	2,310	4,304	86161,360
93	3 19 39,5	1,15	1,10	699	697	86159,79	1,999	4,305	86161,073
93,5	3 21 18,5	1,05	1,005	700	700	86152,65	1,989	4,135	86161,873
93,5	3 42 56,5	1							
93,33								Mean	86161,6165
								Rate of the Clock . . .	— 0,57
								Vibrations in 24 hours . .	86160,940

1st March a. s.

Rate of the Clock 0,03 Hygrometer 1,03 deg. Barometer 30,133 Inches.

Temp.	Time of coincidence.	Arc of oscillation.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″			″			+	+	
81,4	7 26 9	1,8							
81,7	7 30 43,5	1,8	1,45	691,5	691,5	86158,8	3,445	1,860	86160,021
82	7 37 29,87	1,5	1,35	694,39	692,39	86155,13	2,886	3,012	86160,168
82	7 37 29,87	1,5	1,55	707,39	705,39	86150,78	4,260	3,070	86165,110
82	7 50 7,25	1,8	1,1995	703,95	699,95	86155,53	2,914	3,070	86160,180
82	8 10 47,5	1,185							
81,82						Mean			86157,49[illegible]
						Rate of the Clock . . .			— 0,04
						Vibrations in 24 hours . .			86157,449

Hygrometer 1,45 moist. Barometer 30,137

81,5	8 28 49,5	1,8	1,337	699,93	703,93	86155,93	2,931	4,870	86161,921
81,7	8 44 10,75	1,515	1,225	708	708	86155,84	2,559	4,869	86163,016
81,7	8 58 38,25	1,175	1,199	706,95	704,95	86155,25	1,982	4,869	86161,501
81,7	9 9 03	1,095	0,9975	708,5	706,5	86156,1	1,308	4,860	86162,268
81,4	9 29 13,5	0,85							
81,68						Mean			86159,751
						Rate of the Clock . . .			— 0,04
						Vibrations in 24 hours . .			86159,691

Hygrometer 19,25 deg. Barometer 30,142

84,5	18 1 55,75	1,275	1,200	707,5	705,5	86154,09	2,709	8,089	86163,749
85,3	18 18 8,25	1,215	1,175	700,95	698,95	86155,83	2,062	8,101	86167,908
85,7	18 31 19,5	1,125	1,025	701,5	699,5	86153,87	1,964	8,101	86163,938
85,9	18 50 21	1,015	1,050	699,5	697,5	86159,97	1,838	7,309	86161,969
86	19 46 10,5	0,975							
85,01						Mean			86162,[illegible]
						Rate of the Clock . .			— 0,04
						Vibrations in 24 hours .			86161,738

Hygrometer 37,4 deg. Barometer 30,085

87	8 15 59,75	1,8	1,35	696,95	694,95	86151,81	2,960	7,229	86161,139
87,3	8 37 39,5	1,5	1,35	694,75	692,75	86151,99	2,500	7,313	86161,813
88,0	8 59 5,25	1,3	1,15	694,5	692,5	86151,56	2,107	7,315	86161,465
89	9 16 37,75	1,1	1,0815	694,5	692,5	86151,75	1,830	7,160	86161,260
90	9 32 12,25	1,075							
88,74						Mean			86161,[illegible]
						Rate of the Clock . .			— 0,04
						Vibrations in 24 hours .			86161,[illegible]

1st March a. m.

Thermom. 69,25 deg. Barom. 28,573

Temp.	Time of coincidence.	No. of vibrations.	Mean Arc.	Value of $\frac{1}{n}$	Number of vibrations in 24 hours.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″						+	+	
87,6	8 15 35,5	1,475	1,488	624	689	86140,53	2,527	7,092	86180,039
87,5	8 22 46,5	1,575	1,521	660,87	698,87	86151,59	2,651	7,008	86161,073
86,9	8 29 59,57	1,3	1,33	691,75	698,75	86155,18	2,680	6,788	86160,648
85,7	8 43 27,71	1,5	1,15	697,28	693,28	86167,57	2,167	6,533	86169,273
85,5	8 50 38,5	1,5							
86,49						Mean			86169,903
						Rate of the Clock . . .			— 0,61
						Vibrations in 24 hours . .			86169,313

1st March p. m.
Rate of the Clock 0,61

Thermom. 18,25 mild. Barom. 28,102

84	7 25 0,25	1,5	1,25	705	699	86137,89	2,569	4,685	86130,745
84,3	7 40 34,33	1,5	1,18	705,75	701,75	86134,68	2,505	4,750	86181,413
84,1	7 58 34	1,25	1,0725	709,5	703,5	86155,07	1,863	4,599	86181,841
83,7	8 10 18,5	1,005	1,0005	704,25	708,25	86134,63	1,847	4,519	86181,297
83,6	8 29 3,73	0,96							
84,18						Mean			86181,3199
						Rate of the Clock . . .			+ 0,91
						Vibrations in 24 hours . .			86181,319

Thermom. 13,65 mild. Barom. 28,308

81,8	8 26 11,37	1,4	1,25	702,15	699,15	86138,54	2,589	4,691	86181,317
81,8	8 47 30,35	1,5	1,33	702,75	700,75	86134,11	2,549	4,591	86181,081
81,8	8 59 33	1,5	1,15	703	701,0	86134,8	2,167	4,591	86181,305
81,8	9 11 14	1,1	1,0925	700,85	701,35	86133,53	1,850	4,591	86182,171
81,8	28 53 4,01	1,005							
81,8						Mean			86181,67813
						Rate of the Clock . . .			+ 0,40
						Vibrations in 24 hours . .			86181,078

Thermom. 3,75 deg. Barom. 28,163

80,4	11 33 55	1,45	1,2975	698	699	86134,14	2,569	5,567	86181,278
80,8	11 45 5	1,285	1,0875	698,5	698,5	86132,8	2,718	5,599	86180,709
80,9	11 56 41,5	1,25	1,1125	701	699	86133,88	2,439	5,677	86181,996
81,8	12 8 32,5	1,375	1,1375	701,25	699,75	86132,54	2,180	4,591	86180,311
82,8	12 29 3,07	1,2							
80,7						Mean			86181,181
						Rate of the Clock . . .			+ 0,20
						Vibrations in 24 hours . .			86181,381

10th March a. m.

Hygrometer 0,90 dry. Barometer 27,108 Inches.

Temp.	Time of observation.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Corrections for Arc.	Corrections for Temperature.	Vibrations in 24 hours.
	h. ′ ″	°	°	″			+	+	
82,5	18 22 49,89	1,375							
			1,305	708	702	86134,59	0,870	3,568	86182,799
83,8	18 43 23,85	1,375							
			1,225	698,37	697,37	86134,58	0,839	3,990	86181,259
84	18 57 19,60	1,175							
			1,125	690,88	687,80	86133,1	0,674	3,795	86180,569
83,8	1 8 58,5	1,075							
			1,0575	701,75	698,75	86133,76	1,784	3,590	86181,134
83,8	1 19 21,3	1							
83,28						Mean			86181,1053
						Rate of the Clock . . .			+ 0,40
						Vibrations in 24 hours. .			86181,791

Hygrometer 7,75 dry. Barometer 30,050

80	3 33 15,75	1,4							
			1,35	693,75	691,75	86130,98	0,596	6,795	86178,379
80,8	3 47 17,5	1,3							
			1,25	690	688	86131,78	0,580	6,568	86189,935
80,2	3 58 32,3	1,2							
			1,1625	695,25	695,75	86131,05	0,554	6,852	86180,697
80,2	4 10 59,55	1,125							
			1,0825	697,85	695,25	86130,27	1,599	6,533	86180,561
80,2	4 22 0,3	1,05							
80,08						Mean			86180,9561
						Rate of the Clock . . .			+ 0,99
						Vibrations in 24 hours . .			86181,954

Hygrometer 8,8 dry. Barometer 30,050

86,8	4 37 25,3	1,475							
			1,425	659	655	86132,37	2,202	6,208	86180,469
86	4 49 00,8	1,375							
			1,325	664	659	86131,61	2,870	6,708	86180,634
86	4 59 51,3	1,275							
			1,2375	659,75	655,75	86131,83	2,087	6,356	86180,793
86	5 9 10,55	1,2							
84,2	5 18 19,8	1,1	1,15	698,50	697,50	86130,91	2,167	6,176	86181,253
83,44						Mean			86181,0428
						Rate of the Clock . .			+ 0,80
						Vibrations in 24 hours.			86181,841

For the LENGTH of the PENDULUM.

Fourth Set. (B.)

1823. 13th March A. M.

Rate of the Clock + 0,15 Hygrometer 24,12 mid. *Inches.* Barometer 30,161

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″			″			+	+	
79,2	9 53 32	1,45							
			1,3875	697,5	697,5	86159,97	3,095	3,035	86160,900
79,5	6 45 11,5	1,325							
			1,275	702,5	703,5	86154,99	2,663	4,049	86160,792
79,6	8 56 34	1,225							
			1,1875	703,5	701,5	86154,37	2,519	4,103	86160,783
79,8	7 8 37,5	1,15							
			1,1125	702,75	700,75	86154,11	2,028	4,144	86160,282
79,8	7 20 20,25	1,075							
79,55								Mean	86160,459
								Rate of the Clock . . .	+ 0,15
								Vibrations in 24 hours . .	86160,602

Hygrometer 27,35 mid. Barometer 30,166

81,2	8 49 38,5	1,45							
			1,3875	700,25	699,25	86152,25	3,095	4,780	86161,105
81,4	9 1 38,75	1,325							
			1,275	701	699	86153,49	2,663	4,896	86161,039
81,7	9 13 15,75	1,225							
			1,175	702,27	700,27	86152,58	2,202	4,970	86161,212
81,8	9 25 2,12	1,125							
			1,100	704,13	703,13	86154,50	1,982	5,076	86161,048
82,2	9 38 46,25	1,075							
81,60								Mean	86161,251
								Rate of the Clock . . .	+ 0,15
								Vibrations in 24 hours . .	86161,401

Hygrometer 5,3 mid. Barometer 30,124

85	10 53 48,75	1,425							
			1,375	695,75	693,75	86151,63	3,098	6,430	86161,158
85,6	11 5 24,5	1,325							
			1,275	696,75	694,75	86151,99	2,663	6,819	86161,463
86,8	11 17 1,25	1,225							
			1,175	696,19	694,19	86151,77	2,202	7,402	86161,434
86,3	11 28 37,37	1,125							
			1,0875	694,28	692,28	86151,14	1,928	7,052	86161,030
86,4	11 40 11,75	1,05							
86,96								Mean	86161,271
								Rate of the Clock . . .	+ 0,15
								Vibrations in 24 hours . .	86161,421

Hygrometer 27,9 dry. Barometer 30,192

93,2	12 53 42	1,15							
			1,40	683	681	86147	3,211	10,004	86160,215
94	1 5 5	1,25							
			1,30	684,19	682	86147,39	2,709	10,879	86160,418
94,6	1 16 29,12	1,35							
			1,20	682,5	680,5	86146,78	2,356	10,533	86159,679
95,2	1 27 51,62	1,15							
			1,1125	682,63	680,63	86146,86	2,028	10,617	86159,505
95	1 39 14,25	1,075							
94,42								Mean	86159,939
								Rate of the Clock . . .	+ 0,15
								Vibrations in 24 hours . .	86160,102

15th March a. m.

Hygrometer 85,83 deg. Barometer 30,378 Inches.

Temp.	Time of commencement.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″			″			+	+	
84,5	9 55 42,25	2,61	1,45	660,25	679,25	86155,06	2,551	10,201	86158,810
84,2	9 59 3,5	1,35	1,3125	661,12	680,12	86140,67	2,532	10,126	86128,731
84,2	10 11 25,62	1,275	1,205	663,88	681,85	86147,20	2,420	10,279	86160,508
84,4	10 22 49,5	1,175	1,1375	664,35	682,85	86147,84	2,192	10,316	86159,564
84,5	10 34 13,25	1,1							
84,8						Mean			86150,947
						Rate of the Clock . . .			+ 0,13
						Vibrations in 24 hours . .			86150,977

16th March a. m.

Rate of the Clock 40,38 Hygrometer 1,5 moist. Barometer 30,393

82	7 21 5	1,4	1,35	700,5	688,5	86153,29	2,999	3,024	86161,240
81,8	7 32 43,5	1,3	1,25	700,5	700,5	86178,99	2,360	4,991	86181,371
81,8	7 44 25	1,2	1,15	703,69	701,68	86154,41	2,157	3,024	86161,551
82	7 56 11,68	1,1	1,0625	703,13	701,13	86154,91	1,930	3,078	86161,166
82	8 7 34,25	1,025							
81,92						Mean			86161,672
						Rate of the Clock . . .			+ 0,24
						Vibrations in 24 hours . .			86161,912

Hygrometer 0,85 moist. Barometer 30,317

81,8	8 27 30,13	1,125	1,075	699,63	697,63	86151,51	2,979	3,007	86139,765
82,2	8 39 10,75	1,025	1,0125	700,31	700,31	86158,11	2,669	3,781	86197,916
82,5	8 50 55,5	1,000	1,1875	703,13	701,13	86154,46	2,210	3,366	86161,030
82,4	9 2 37,38	1,15	1,10	703,57	701,57	86154,89	1,998	3,215	86161,357
82,4	9 14 20,92	1,05							
82,09						Mean			86161,2895
						Rate of the Clock . .			+ 0,24
						Vibrations in 24 hours . .			86161,608

Hygrometer 85 dry. Barometer 30,119

80,9	11 20 40,5	1,175	1,225	695,19	696,19	86159,59	2,468	3,127	86167,898
80,5	11 43 18,69	1,275	1,2375	693,68	698,62	86169,70	2,076	3,208	86181,378
80,0	11 55 43,85	1,075	1,0375	691	699,0	86169,93	1,764	3,047	86181,291
80,5	12 8 14,25	1,00	0,9625	692,5	699,5	86159,47	1,518	3,302	86169,858
80,3	12 20 46,75	0,925							
81,24						Mean			86167,42625
						Rate of the Clock . .			+ 0,24
						Vibrations in 24 hours . .			86167,778

14th March a. m.

Hygrometer 53,0 *dry.* *Inches.* Barometer 30,093

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″			″			+	+	
91,3	12 30 8,5	1,325							
			1,275	689,5	687,5	86149,38	2,663	9,133	86161,476
92,5	12 41 34	1,325							
			1,175	687,75	685,75	86148,74	2,302	10,173	86161,173
94,8	12 53 1,75	1,325							
			1,0875	686,25	684,25	86148,03	1,728	10,561	86160,569
95,7	1 4 28	1,05							
			1,0125	686,75	684,75	86148,38	1,680	10,892	86160,952
95,8	1 15 54,75	0,975							
94,16						Mean			86161,043
						Rate of the Clock . . .			+ 0,34
						Vibrations in 24 hours . .			86161,383

Hygrometer 47,85 *dry.* Barometer 30,050

94,8	4 2 2,5	1,4							
			1,35	683,75	681,75	86147,27	2,986	10,385	86160,641
94,3	4 13 26,25	1,3							
			1,25	684,75	682,75	86148,9	2,502	10,215	86161,675
94	4 24 51	1,2							
			1,1025	687,5	685,5	86148,65	2,214	10,131	86160,995
93,9	4 36 18,5	1,125							
			1,100	686,25	684,25	86148,06	1,992	9,983	86160,035
93,3	4 47 44,75	1,075							
94,08						Mean			86161,6785
						Rate of the Clock . . .			+ 0,34
						Vibrations in 24 hours . .			86161,171

16th March a. m.
Rate of the Clock—0,30 Hygrometer 34,75 *moist.* Barometer 30,147

77,6	8 16 12,5	1,4							
			1,35	706,5	704,5	86150,42	2,980	3,290	86161,895
78	8 27 59	1,3							
			1,25	709,37	707,37	86150,4	2,560	3,384	86162,744
78	8 39 45,37	1,2							
			1,1025	709,25	707,25	86150,30	2,214	3,384	86161,898
78	8 50 57,62	1,125							
			1,075	711,13	709,13	86147,01	1,961	3,440	86162,400
78,2	9 3 29,75	1,025							
77,80						Mean			86162,09925
						Rate of the Clock . . .			— 0,30
						Vibrations in 24 hours . .			86161,799

Hygrometer 50,85 *moist.* Barometer 30,162

80,8	10 28 11,02	1,4							
			1,35	708,12	706,12	86153,98	2,986	4,759	86163,725
81,7	10 50 10,75	1,3							
			1,25	703,25	701,25	86154,08	2,560	5,019	86161,833
82	11 2 43	1,2							
			1,15	703,75	702,75	86153,15	2,127	5,665	86162,562
82,8	11 14 29,75	1,1							
			1,00	704,5	702,5	86154,72	1,811	5,696	86162,787
82,8	11 26 12,25	1,00							
82,22						Mean			86162,5815
						Rate of the Clock . . .			— 0,30
						Vibrations in 24 hours . .			86162,281

16th March a. m.

Hygrometer 1,25 dry. *Inches.* Barometer 30,169

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″			″			+	+	
84,7	12 27 19	1,275							
			1,2125	701	699	86153,49	2,825	6,981	86162,394
85	12 49 00	1,25							
			1,2	701,75	699,75	86153,74	2,359	6,430	86162,549
85,4	1 00 41,75	1,15							
			1,125	702,62	702,62	86154,02	2,200	6,514	86162,334
85,4	1 12 14,37	1,05							
			1,03	709,88	698,88	86153,45	1,728	6,541	86161,829
86	1 24 5,25	1							
85,3								Mean	86162,3765
								Rate of the Clock . . .	— 0,90
								Vibrations in 24 hours . .	86162,076

Hygrometer 30,35 dry. Barometer 30,067

90	3 39 57,25	1,4							
			1,35	689,3	687,5	86149,38	2,985	8,460	86160,820
90	3 48 03,75	1,3							
			1,25	691	689	86149,53	2,960	8,449	86160,939
89,9	3 53 57,75	1,2							
			1,16	691,75	689,75	86150,90	2,905	8,449	86160,854
90	4 3 09,5	1,12							
			1,065	691,5	689,5	86150,11	1,999	8,502	86160,541
90,2	4 17 1	1,05							
90,02								Mean	86160,789
								Rate of the Clock . . .	— 0,70
								Vibrations in 24 hours . .	86160,189

18th March a. m.
Rate of the Clock—1,10. Hygrometer 0,1 dry. Barometer 30,027

81,8	7 54 52,5	1,275							
			1,205	704	702	86154,35	2,870	5,101	86162,387
82,6	8 6 30,5	1,275							
			1,225	705,5	703,5	86155,07	2,459	5,114	86162,913
82,0	8 18 22	1,175							
			1,125	704	702	86154,55	2,074	5,541	86162,165
83,2	8 30 0	1,075							
			1,0375	707	705	86155,59	1,764	5,669	86163,023
85,6	8 41 53	1							
82,84								Mean	86162,6795
								Rate of the Clock . .	— 1,10
								Vibrations in 24 hours . .	86161,579

Hygrometer 2,5 dry. Barometer 30,074

83,6	10 18 7,5	1,375							
			1,325	702,12	700,12	86155,99	2,870	5,689	86162,855
83,3	10 29 49,62	1,275							
			1,225	702,78	700,38	86155,98	2,439	5,816	86162,213
84	10 41 29	1,175							
			1,125	703,62	701,62	86154,41	2,074	6,010	86162,742
83,5	10 57 15,62	1,075							
			1,0375	702,88	700,88	86154,15	1,764	6,038	86162,872
87,4	11 4 38,5	1							
84,76								Mean	86162,57875
								Rate of the Clock . .	— 1,10
								Vibrations in 24 hours . .	86161,479

19th *March* s. n.

Hygrometer 59,8 dg. Barometer 30,002 *Inches.*

Temp.	Time of observation.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed elevation in 24 hours.	Corrections for Arc.	Corrections for Temperature.	Vibrations in 24 hours.
	h. ′ ″	°	°	″			+	+	
94,8	12 9 47,35	1,45							
93,6	12 21 2,3	1,25	1,40	863,35	861,55	86157,01	2,311	10,660	86167,961
93	12 32 59,15	1,25	1,27	865,35	863,55	86178,89	2,709	10,813	86181,318
92,8	12 43 55,35	1,15	1,09	864,3	863,5	86167,35	2,259	11,107	86181,072
92,8	12 55 15,37	1,025	1,1095	865,17	863,18	86167,78	2,095	11,448	86181,308
93,1						Mean			86731,19975
						Rate of the Clock . . .			— 1,10
						Vibrations in 24 hours . .			86100,000

Hygrometer 49 dg. Barometer 30,053

93,5	3 1 45,35	1,6	1,55	867,5	865,5	86180,57	3,026	10,004	86193,575
93,8	3 13 9,75	1,5	1,4075	869,75	867,75	86180,81	2,786	9,856	86193,152
93,8	3 24 29,5	1,375	1,2525	870,95	868,95	86187,82	2,631	9,660	86190,391
93,8	3 35 57,75	1,5	1,35	866	864,0	86189,1	2,560	9,346	86193,009
93,8	3 47 23,75	1,4							
93,93						Mean			86190,31413
						Rate of the Clock . . .			— 1,10
						Vibrations in 24 hours . .			86189,313

Hygrometer 48,2 dg. Barometer 29,998

91,8	3 30 39	1,475	1,375	870,35	868,35	86182,82	3,098	9,010	86195,980
91,8	3 42 59,35	1,325	1,275	866,55	864,55	86180,63	2,902	8,917	86192,558
91,8	3 53 50,5	1,225	1,1925	869	867	86180,8	2,719	8,873	86192,384
91,8	4 5 15,5	1,275	1,2275	870	868	86180,99	2,588	8,823	86192,402
91,8	4 16 34,5	1,3							
91,89						Mean			86192,6888
						Rate of the Clock . . .			— 1,10
						Vibrations in 24 hours . .			86191,588

19th *March* s. n.
Rate of the Clock—1,10 Hygrometer 9 moist. Barometer 30,047

79,8	6 39 49	1,4	1,3875	708	706	86155,21	3,088	5,807	86166,089
79,8	6 51 39	1,375	1,319	709,75	708,75	86155,3	2,903	5,931	86166,097
79,8	7 3 2	1,225	1,2975	709,95	708,95	86158,09	2,719	6,103	86167,128
80	7 14 5	1,15	1,1885	709,9	707,9	86156,85	2,628	6,250	86166,706
79,89	7 25 54,5	1,025							
						Mean			86162,93171
						Rate of the Clock . . .			— 1,10
						Vibrations in 24 hours . .			86261,831

13 Mars a. s.

Hygromètre 17,1 noté. Baromètre 26,099 Pouces.

Temp.	Temps de chaque Oscillation.	Arc d'oscillation.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed Vibrations in 24 hours.	Corrections for Arc.	Corrections for Temperature.	Vibrations in 24 hours.
	h. ′ ″	°	°	″			+	+	
80,5	9 48 10,5	1,8							
80,8	9 54 3	1,3	1,55	709,5	701,5	86154,27	0,986	8,155	86163,819
81	9 5 49,5	1,2	1,25	701,8	704,5	86156,11	0,800	8,631	86165,581
81,2	9 17 27,25	1,1	1,13	707,25	705,75	86155,63	0,667	8,685	86165,719
81,5	9 29 10	1	1,01	708,75	708,75	86156,17	1,508	8,601	86166,777
80,76						Mean			86160,87985
						Rate of the Clock . . .			— 1,19
						Vibrations in 24 hours . .			86021,899

Hygromètre 17,8 noté. Baromètre 26,071

83	10 03 10,5	1,6							
83,6	10 09 36,25	1,5	1,35	705,75	702,75	86158,11	0,96	8,699	86168,748
84,7	10 20 49	1,2	1,25	709,75	709,75	86154,11	0,860	8,863	86163,813
85,5	11 8 03,03	1,1	1,13	701,25	699,25	86153,34	0,107	8,819	86161,906
86,5	11 16 5,5	1,063	1,0625	702,25	700,25	86155,93	1,850	8,719	86165,869
83,84						Mean			86161,6975
						Rate of the Clock . . .			— 1,19
						Vibrations in 24 hours . .			86161,857

Hygromètre 18,45 dgs. Baromètre 26,063

91,3	11 51 05,5	1,4							
92,2	11 43 59,75	1,3	1,35	695,25	697,25	86149,95	0,762	9,000	86163,478
93,3	11 55 09,5	1,2	1,25	695,75	697,75	86149,47	0,569	9,133	86163,463
94	1 6 55,5	1,1	1,13	693	698	86149,37	0,167	9,317	86161,860
93,9	1 18 14,25	1,05	1,075	693,25	695,25	86149,7	1,068	9,305	86162,362
90,38						Mean			86161,86385
						Rate of the Clock . .			— 1,19
						Vibrations in 24 hours .			86160,585

Hygromètre 81,7 dgs. Baromètre 26,033

95,9	9 40 44,5	1,275							
94,8	9 50 9,75	1,275	1,263	693,89	695,89	86147,95	2,876	10,493	86161,350
95,3	9 2 20,08	1,175	1,2625	695,37	697,37	86149,36	2,439	10,499	86162,469
95,9	9 13 09	1,1	1,1375	680,39	678,39	86160,09	9,280	10,714	86159,884
94,5	9 25 05,5	1	1,03	695,5	694,5	86149,09	1,906	10,535	86160,731
95,04						Mean			86160,86075
						Rate of the Clock . .			— 1,18
						Vibrations in 24 hours .			86159,791

20th March A. M.

Rate of the Clock—0,38 Hygrometer 20,55 moist. Inches. Barometer 30,075

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ' "			'			+	+	
79,7	7 35 39,37	1,5							
			1,45	702,28	700,38	86153,98	3,445	4,166	86161,591
80	7 47 14,75	1,4							
			1,3275	706	704	86153,84	2,931	4,230	86162,401
80	7 59 00,75	1,275							
			1,225	707	705	86155,30	2,430	4,272	86162,321
80,2	8 10 47,75	1,175							
			1,1375	706,5	704,5	86155,41	2,120	4,315	86162,845
80,2	8 22 34,25	1,1							
80,02							Mean		86162,0395
							Rate of the Clock . . .		— 0,38
							Vibrations in 24 hours . .		86161,655

Hygrometer 11,5 moist. Barometer 30,080

82	10 23 12	1,45							
			1,40	701,5	699,5	86153,07	3,211	5,303	86162,084
82,6	10 36 53,5	1,35							
			1,3875	703,75	701,75	86154,46	2,710	5,457	86162,633
83,2	10 48 37,25	1,225							
			1,1875	702,75	700,75	86154,11	2,310	5,710	86162,130
83,8	11 00 20	1,15							
			1,100	702,5	700,5	86154,02	1,989	6,098	86162,030
84,7	11 12 9,5	1,05							
83,26							Mean		86162,11993
							Rate of the Clock . . .		— 0,38
							Vibrations in 24 hours . .		86161,839

Hygrometer 6,2 dry. Barometer 30,008

85,5	12 14 34,25	1,3							
			1,45	695,25	693,25	86151,45	3,415	6,335	86161,440
85,4	12 26 8,5	1,4							
			1,35	698	696	86152,44	2,986	6,387	86161,813
84,9	12 37 47,5	1,3							
			1,25	701	699	86153,40	2,560	6,028	86162,078
83,7	12 49 28,5	1,2							
			1,15	703	701	86154,2	2,157	5,669	86162,035
83,9	1 1 11,5	1,1							
84,5							Mean		86161,8415
							Rate of the Clock . . .		— 0,38
							Vibrations in 24 hours . .		86161,461

Hygrometer 7,7 dry. Barometer 30,028

84	1 25 12	1,4							
			1,35	699,5	697,5	86152,97	2,986	6,091	86162,047
84,8	2 39 55,5	1,3							
			1,25	702	700	86153,85	2,560	6,155	86162,565
84,3	2 51 33,5	1,2							
			1,1625	701,25	699,25	86153,58	2,214	6,408	86162,992
85	3 3 14,75	1,125							
			1,100	700	698	86153,14	1,992	6,599	86161,721
85,2	3 14 54,75	1,075							
84,85							Mean		86162,13273
							Rate of the Clock . . .		— 0,38
							Vibrations in 24 hours . .		86161,734

2016 *March* A. M.

Hygrometer 22,05 *deg.* Locker. Barometer 30,015

Temp.	Time of coincidence.	Arc of vibration.	Mean Arc.	Interval in seconds.	Number of vibrations.	Observed vibrations in 24 hours.	Correction for Arc.	Correction for Temperature.	Vibrations in 24 hours.
	h. ′ ″			″			+	+	
85,4	4 14 47,5	1,4							
			1,39	698,25	670,25	86150,52	2,986	6,387	86161,850
84,8	4 26 25,75	1,3							
			1,29	698,75	696,75	86159,70	2,560	6,031	86161,331
84	4 38 4,5	1,2							
			1,1025	702	700,9	86153,85	2,214	5,710	86161,700
83	4 49 46,5	1,125							
			1,100	703	701,9	86154,2	1,982	5,372	86161,554
82,1	5 1 29,5	1,075							
83,92									

Mean	86161,6045
Rate of the Clock . . .	— 0,38
Vibrations in 24 hours . .	86161,245

Table of the Results of the foregoing Experiments.

First Set (L.)

Day 1823	Time of the Experiment.	Mean Height of the Thermometer.	Mean Height of the Barometer.	Mean Height of the Hygrometer.	Number of Vibrations in 24 hours at the Temperature of 70° of Fahrenheit.
			Inches.		
February 15	A. M.	82,8	30,225	8 mod.	86158,848
	A. M.	85,17	30,213	9 dry.	86158,196
	P. M.	94,33	30,183	32	86157,221
	P. M.	90,67	30,148	39,5	86157,844
16	A. M.	82,17	30,188	9,5	86159,872
	A. M.	85,33	30,208	12,5	86159,873
	A. M.	89,33	30,208	21,5	86158,149
	P. M.	91,83	30,163	43	86157,687
	"	91,33	30,134	46	86158,422
17	A. M.	80,67	30,181	8	86159,678
	"	83	30,174	7	86159,331
	"	85,91	30,173	11,5	86158,784
	P. M.	94,09	30,149	38,5	86157,214
	"	95,9	30,103	40	86158,773
18	A. M.	80,25	30,125	8	86159,514
	"	82,24	30,113	10	86159,650
	P. M.	91,7	30,154	50	86157,787
	"	96,74	30,132	47	86157,538
	"	94,5	30,098	43,5	86158,966
19	A. M.	81,65	30,145	13	86159,155
	"	83,55	30,133	12,5	86159,493
	P. M.	93,2	30,173	49,5	86158,223
	"	97,04	30,108	42,5	86158,116
	"	90,85	30,103	50	86158,523
	"	88,78	30,102	48	86159,213
20	A. M.	81,11	30,112	14	86159,793
	"	83,70	30,148	16,5	86159,460
	"	87,21	30,154	22,5	86159,180
	P. M.	92,1	30,139	46	86159,385
	"	94,6	30,113	46	86158,571
		88,63	30,154	90,77 dry.	86158,674

Table of the Results of the foregoing Experiments.

Second Set (L.)

Day 1823	Time of the Experiment.	Mean Height of the Thermometer.	Mean Height of the Barometer.	Mean Height of the Hygrometer.	Number of Vibrations in 24 hours at the Temperature of 70° of Fahrenheit.
			Inches.		
February 22	A. M.	81,2	30,150	19,3 dry.	86161,333
	"	82,65	30,182	17	86161,576
	"	90,5	30,163	27,5	86160,004
	P. M.	94,35	30,143	45,5	86159,405
	"	92,5	30,093	37,5	86159,877
	"	88,2	30,093	53	86160,280
23	A. M.	80,5	30,097	15,5	86159,820
	"	83,3	30,153	20	86160,034
	"	85,24	30,153	24,5	86159,773
	P. M.	92,5	30,113	46,5	86158,816
	"	94,5	30,098	54	86158,981
24	A. M.	82,72	30,090	21,5	86160,907
	"	83,80	30,155	28	86160,152
	P. M.	91,25	30,101	35,5	86160,378
	"	97,3	30,098	56	86158,135
	"	93,7	30,059	57	86158,308
	"	88,7	30,059	55	86158,713
25	A. M.	78,7	30,085	4,5	86160,733
	"	79,55	30,105	1,5	86160,710
	"	82,8	30,120	11	86161,074
	P. M.	88,7	30,053	26	86159,826
	"	90,35	30,031	39	86160,076
26	A. M.	81,65	30,041	10	86160,448
	"	83,14	30,045	16,5	86160,534
	P. M.	92,4	30,045	24	86158,858
	"	95,55	30,029	55	86158,373
	"	93,7	30,019	57	86158,215
	"	89,6	30,036	55	86158,403
		87,78	30,088	33,6 dry.	86159,718

TABLE of the RESULTS of the foregoing EXPERIMENTS.

THIRD SET (L.)

Day 1829	Time of the Experiment.	Mean Height of the Thermometer.	Barometer.	Hygrometer.	Number of Vibrations in 24 hours at the Temperature of 70° of Fahrenheit.
		°	Inches.		
March 1	A. M.	80,55	30,031	1,5 moist.	86160,395
	"	81,86	30,053	2,5 dry.	86160,714
	"	89,5	30,040	19	86160,142
	P. M.	94,19	30,021	51,5	86159,299
	"	92,95	30,011	52,5	86159,289
	"	89,22	30,011	51	86159,585
3	A. M.	76,2	30,051	29 moist.	86160,505
	"	79,3	30,059	26	86160,799
	"	85,16	30,073	30 dry.	86161,031
	P. M.	87,49	30,026	27	86161,714
	"	88,70	30,013	37	86159,944
4	A. M.	81,85	30,060	31 moist.	86160,940
	"	84,12	30,058	17	86160,669
	P. M.	83,74	30,028	31,5	86160,171
	"	82,98	30,042	5,5 dry.	86160,069
9	A. M.	87,44	30,151	1 moist.	86161,038
	"	82,46	30,166	11 dry.	86160,879
	P. M.	82,4	30,183	16	86160,732
	"	84,2	30,081	20,5	86161,327
	"	83,4	30,091	23	86161,022
10	A. M.	80,2	30,023	6 moist.	86160,388
	"	82,36	30,117	3,5 dry.	86161,423
	"	83,86	30,153	13,5	86160,891
	P. M.	87,44	30,131	25	86160,945
	"	89,46	30,073	21,5	86160,976
12	A. M.	80,3	30,076	19 moist.	86161,020
	"	82,54	30,124	7,5	86161,093
	"	84,76	30,113	3	86160,007
	P. M.	85,58	30,078	1,5 dry.	86161,020
	"	88,46	30,079	5,5	86161,010
		84,102	30,077	13,7 dry.	86160,778

Table of the Results of the foregoing Experiments.

Fourth Set. (L.)

Day 1823		Time of the Experiment.	Mean Height of the Thermometer.	Barometer.	Hygrometer.	Number of Vibrations in 24 hours at the Temperature of 70° of Fahrenheit.
			°	Inches.		
March	13	A. M.	80,76	30,103	24,5 moist	86160,709
		"	82,9	30,121	18,5 dry.	86161,594
		P. M.	91,04	30,125	17,5	86160,915
		"	94,94	30,098	44,5	86159,517
		"	92,38	30,081	48,5	86159,852
	14	A. M.	80,86	30,080	4 moist.	86162,009
		"	83,29	30,135	4	86162,000
		"	86,1	30,133	0	86162,000
		P. M.	96,76	30,103	44 dry.	86160,712
		"	96	30,085	51	86161,118
		"	95,75	30,079	49	86160,743
	16	A. M.	77,08	30,141	35,5 moist	86161,320
		"	80,04	30,164	31,5	86161,592
		"	84,7	30,164	9	86161,794
		P. M.	84,04	30,121	8,5 dry.	86159,590
		"	89,8	30,155	92,5	86160,964
	18	A. M.	81,26	30,030	4,5	86161,608
		"	83,2	30,059	1	86161,857
		"	92,92	30,077	15,5	86163,025
		P. M.	90,56	30,034	42,5	86159,877
		"	94,58	30,041	40,5	86158,703
	21	A. M.	80,04	30,097	11 moist.	86161,761
		"	82,18	30,082	17,5	86161,559
		"	90,92	30,069	7 dry.	86163,930
		P. M.	93,85	30,041	31,5	86159,916
		"	94,09	30,011	53,5	86160,056
	25	A. M.	79,48	30,051	11 moist.	86161,575
		"	81,59	30,119	18	86162,023
		"	83,38	30,073	1	86161,499
		P. M.	82,78	30,055	4,5 dry.	86161,954
		"	86,04	30,023	18	86161,387
			87,99	30,091	18,95 dry.	86160,694

Tables of the Results of the foregoing Experiments.

First Set (B.)

Day 1823	Time of the Experiment.	Mean Height of the Thermometer.	Mean Height of the Barometer.	Mean Height of the Hygrometer.	Number of Vibrations in 24 hours at the Temperature of 70° of Fahrenheit.
		°	Inches.		
February 15	A. M.	80,84	30,170	6,75 moist	86159,059
	"	80,84	30,193	5,65	86158,760
	P. M.	82,38	30,208	27,03 dry.	86157,222
	"	82,84	30,153	40	86157,227
16	A. M.	80,74	30,160	2,35	86159,156
	"	83,5	30,192	5,15	86159,456
	"	87,7	30,194	8,3	86159,277
	P. M.	94,4	30,188	35,9	86157,829
	"	96,50	30,132	47,29	86157,895
17	A. M.	81,74	30,158	4,35	86159,204
	"	82,16	30,168	4,5	86159,131
	P. M.	99,16	30,156	24,05	86159,000
	"	88,2	30,118	41,30	86158,384
	"	85,5	30,068	35,85	86160,200
18	A. M.	79,08	30,103	8,4	86159,208
	"	81,12	30,169	8,15	86159,665
	"	85	30,151	11,30	86160,152
	P. M.	95,36	30,141	48,20	86157,303
	"	96,2	30,103	54,6	86158,152
19	A. M.	81,7	30,127	17	86159,559
	"	82,36	30,159	8,4	86159,555
	"	87,1	30,144	15,85	86158,895
	P. M.	96,6	30,144	44,55	86157,973
	"	93,68	30,110	51,5	86158,177
20	A. M.	82,1	30,134	12,5	86159,857
	"	82,2	30,135	12,25	86159,663
	P. M.	89,74	30,135	34,95	86157,870
	"	94,5	30,139	51,25	86157,829
	"	89,04	30,097	16	86158,911
		87,13	30,144	24,00 dry.	86158,788

Second Set (R.)

Day 1823	Time of the Experiment.	Mean Height of the Thermometer.	Barometer.	Hygrometer.	Number of Vibrations in 24 hours at the Temperature of 70° of Fahrenheit.
			Inches.		
February 27	A. M.	81,86	30,187	14,93 *dry.*	86161,148
	"	85,36	30,189	19,45	86161,785
	P. M.	92,7	30,160	36,4	86160,597
	"	93,98	30,115	52,3	86159,394
28	A. M.	81,38	30,141	16,2	86159,606
	"	89,32	30,148	17,7	86160,87
	"	90,1	30,149	37,45	86159,119
	P. M.	90,36	30,078	55,85	86158,319
	"	90,4	30,051	55,1	86158,303
29	A. M.	80,9	30,080	29,5	86159,607
	"	80,86	30,128	25,75	86160,472
	"	86,02	30,125	30,2	86160,741
	P. M.	94,7	30,085	51,75	86158,67
	"	96,92	30,050	60,5	86158,186
30	A. M.	78,12	30,098	1,15 *moist*	86160,237
	"	80,56	30,112	0,6 *dry.*	86160,878
	P. M.	84,7	30,078	18,8	86159,759
	"	89,7	30,045	31,95	86159,012
	"	88,08	30,041	41,95	86158,97
31	A. M.	80,72	30,023	9,7	86160,314
	"	87,7	30,068	13,35	86160,623
	"	85,78	30,033	21,85	86159,789
	P. M.	92,8	30,041	49,2	86158,309
	"	95,02	30,013	58,85	86158,107
		87,65	30,092	30,63 *dry.*	86159,043

Third Set (R.)

Day 1828		Time of the Experiment.	Mean Height of the Thermometer.	Mean Height of the Barometer.	Mean Height of the Hygrometer.	Number of Vibrations in 24 hours at the Temperature of 70° of Fahrenheit.
				Inches.		
March	1	A. M.	79,68	30,032	3,55 *moist.*	86161,292
		"	80,53	30,035	0,45 *dry.*	86160,739
		"	83,84	30,062	11,8	86160,25
		P. M.	93,44	30,035	46,5	86159,849
		"	94,2	30,009	53,9	86159,029
	3	A. M.	77,26	30,075	29,00 *moist.*	86160,303
		"	82,23	30,050	8,8	86160,704
		P. M.	85,42	30,051	20,45 *dry.*	86160,948
		"	89,44	30,018	35,5	86160,178
		"	85,84	30,012	37,25	86160,297
	4	A. M.	77,32	30,041	23,00 *moist.*	86161,302
		"	78,28	30,057	28,55	86161,031
		"	84,02	30,078	27,75	86161,482
		P. M.	85,68	30,033	1,1 *dry.*	86160,496
		"	81,56	30,011	4,05	86160,623
	9	A. M.	80,64	30,135	2,3 *moist.*	86160,515
		"	81,8	30,153	6,2 *dry.*	86161,776
		"	82,72	30,143	15,1	86161,288
		P. M.	83,36	30,082	17,15	86161,050
		"	84,84	30,070	21,85	86160,840
	10	A. M.	81,82	30,165	5,65 *moist.*	86161,849
		"	81,60	30,147	1,45	86161,091
		P. M.	86,02	30,145	38,35 *dry.*	86161,756
		"	88,74	30,085	37,4	86161,052
		"	86,42	30,073	40,95	86160,373
	13	A. M.	81,42	30,102	14,25 *moist.*	86161,519
		"	81,8	30,108	32,65	86161,677
		"	82,7	30,105	3,75 *dry.*	86161,382
		P. M.	83,58	30,088	0,90	86161,791
		"	86,08	30,049	7,75	86161,024
		"	85,44	30,050	8,8	86161,241
			83,82	30,075	7,44 *dry.*	86161,035

Fourth Set (R.)

Day 1823	Time of the Experiment.	Mean Height of the Thermometer.	Mean Height of the Barometer.	Mean Height of the Hygrometer.	Number of Vibrations in 24 hours at the Temperature of 70° of Fahrenheit.
		°	Inches.		°
March 13	A. M.	79,38	30,081	24,12 moist.	86160,079
	"	81,60	30,100	22,33	86161,401
	"	80,50	30,122	5,30	86161,401
	P. M.	81,42	30,101	37,0 dry.	86160,102
	"	84,4	30,079	48,05	86159,977
14	A. M.	81,02	30,093	6,9 moist.	86161,762
	"	80,98	30,117	6,85	86161,668
	"	81,34	30,118	23,0 dry.	86161,772
	P. M.	84,18	30,093	33,6	86161,383
	"	84,04	30,050	47,85	86161,171
16	A. M.	77,86	30,147	34,73 moist.	86161,760
	"	80,92	30,163	26,85	86162,281
	P. M.	83,3	30,128	1,95 dry.	86162,070
	"	90,02	30,067	30,35	86160,690
18	A. M.	82,84	30,067	8,10	86161,579
	"	84,76	30,074	2,5	86161,479
	P. M.	86,1	30,067	34,6	86160,100
	"	92,86	30,013	49,0	86159,015
	"	91,58	29,998	49,2	86159,392
19	A. M.	79,48	30,050	9,0 moist.	86161,212
	"	80,96	30,069	17,1	86161,302
	"	84,64	30,071	11,8	86161,377
	P. M.	92,56	30,043	24,45 dry.	86160,365
	"	93,04	30,003	43,7	86159,701
20	A. M.	80,02	30,075	20,55 moist.	86161,659
	"	83,06	30,070	11,6	86161,839
	P. M.	84,5	30,018	6,9 dry.	86161,461
	"	84,86	30,018	7,7	86161,734
	"	85,02	30,015	22,03	86161,945
		85,71	30,036	9,18 dry.	86161,09

Remark.—Great Changes in the Atmosphere took place, it will be seen, during the time these Experiments were making—In the course of a day, we find the Thermometer at the commencement of the Experiments in the Morning at 21° or 22°, the Hygrometer from 14° to 15° moist—and in the afternoon of the same day, while the Experiments were going on, the heat increased to 24° or 25°—the Hygrometer at the same time showing from 30° to 40° dry; and considerable Variations, though not quite so great as extent as these, are common—The Nights being generally cold with Dew sometimes, and sometimes Rain falling—Rain also fell on some of the days.

Although the Observatory was of double Tenement, and the part above the Apparatus covered with a large Tarpaulin, it was to be expected, that the Pendulum must have felt such changes in them, and in a degree not shown, I imagine, by the Instruments used for reducing the Experiments—The only Corrections now required are for the Temperature of the Atmosphere, and for the Height of the Pendulum, above the Level of the Sea—That for the latter will be the same for all the Sets—and the Heights of the Barometer, used for the former of these Corrections, very but little in the first Sets—but it will be seen, almost invariably, when the Hygrometer showed the Atmosphere to be dense, the Vibrations in 24 hours were greater than when it was in a dry state—The Observations commenced early in the day, after the Pendulum had been under the influence of the cold and damp of the Night, and I am led to think retained a much greater degree of cold, than was exhibited by the Thermometer, particularly during the time the moisture it might have collected, was evaporating, by the influence of the Sun—Hence the greater number of Vibrations at such times: Again, great heat in the middle of the day, might be retained by the metal of which the Pendulum is composed—in a greater degree and longer than the Air—Hence the greater the expansion of the Pendulum, and the consequent fewer number of Vibrations in 24 hours, than would have been shown under a more equable state of the Atmosphere—The differences, exclusive of such part as are attributable to the different Heights of the Barometer, though very obvious, are not large; and if the Changes in the Atmosphere which we have noticed, give in one case too small a number of Vibrations, and in the other a number too large, the Mean will probably show at correct a Result, as could be obtained under the most favorable circumstances. Before closing this Remark, I shall take the opportunity to state, that the Barometer used with the Expedition, though the best to be procured here, and a good one, so far as related to the Rise and Fall of the Mercury; yet from some general defect (in the Scale probably) showed the Height less than it ought—and by Comparison with the Observatory Barometer, both before the Expedition left Madras, and after its return, the exact difference was 0,008 Inch—this Correction has accordingly been applied, to all the Heights of the Barometer registered with the Experiments and Observations.

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* Some Experiments, which I have since made at the Observatory, confirm the opinion whereof given—during the time however of making the Experiments although great changes took place in the Thermometer, there were none in the Hygrometer—and it appears to have been when there were considerable changes in the latter, that the greatest effect of the Atmosphere was felt by the Pendulum at the Sea.

We shall now proceed to apply the remaining Corrections. The *Specific Gravity* of the Pendulum was ascertained by the Mean Experiments in the manner stated in my Paper published in the *Philosophical Transactions*; I was anxious to have this verified, and if possible, by a more accurate Apparatus than I was able to submit the Pendulum to before—this it occurred to me might probably be done at the Mint; and I accordingly addressed The Honorable The Directors to Counsel upon the subject; an Order was immediately sent to the Assay Master, *Dr. Aitken*, to have the Operation performed—this was most carefully done, and the Mean Result of three Trials on different days, was as follows:

Thermometer.	Barometer.	Specific Gravity.
83°	29,555	7,295

Distilled Water was used on the two first days, and Rain Water on the third day; the Results however differed very little. The Specific Gravity of the Pendulum formerly found, the Thermometer having been 89° and the Barometer 29,960, was 8,1285; the difference therefore is not very considerable; but I shall of course use the Most Specific Gravity in the following Computations, and also by it, ascertain the Correction for the Buoyancy of the Atmosphere, applied to the Experiments for finding the Length of the Pendulum at *Madras*.

The weight of Water at 83° of the Thermometer and 29,55 inches of the Barometer, is as 998 to 1—the Expansion of Air for each degree of the Thermometer being $\frac{1}{434}$ of its bulk—The *Specific Gravity* of the Pendulum, at that Height of the Thermometer and Barometer, will therefore be 7,3014.

Correction for the Buoyancy of the Atmosphere.

First Set (A.)

Times.	Rates.	Vibrations in 24 hours.
89,53	95,131	86138,871
33	95,010	
21,53		

Then 1,7117 × 21,53 = $\frac{3}{4}$ . . . 49,0668

95,131 : 826 = 95,010 : 831,1074

873,6092

998 : 7,3014 = 873,6092 : 7,3028 Specific Gravity.

And 873,6092 × 7,3028 = 6394,9970 the Pendulum heavier than Air.

Square of the No. of Vibrations, 86138,871 = 7420217769,1383 divided by 6394,9970 = 1079097,072 × the Square of the Number of Vibrations in 24 hours, and the Square Root of the same, gives the Number of Vibrations in 24 hours, corrected for the Buoyancy of the Atmosphere = 86138,511 or + 9,537 Vibrations, for the Correction.

In the manner the Corrections for the Buoyancy of the Atmosphere were found for the other Sets (*B, C*)—and are—for the *Second* Set + 8,458; for the *Third* + 8,331: and for the *Fourth* + 8,160.

The Corrected number of Vibrations in 24 hours will therefore be—*First Set* 86151,971. *Second* 86151,960. *Third* 86147,111. *Fourth* 86147,855.

Following the same process with the Results (*E.*), we shall have the Correction on account of the Buoyancy of the Atmosphere for the *first Set* 0,0024; for the *Second* 0,2096; for the *Third* 0,2490; and for the *Fourth* 0,2758.

And the corrected number of Vibrations—*First Set* 86165,8724. *Second* 86169,3113. *Third* 86167,2698; and the *Fourth* 86167,2639.

It now only remains to ascertain and apply the Correction for the Height of the Pendulum above the Level of the Sea—The Height of the Pendulum above the Level of the Sea at low water, was 171 feet, or 0,0323748 of a mile; the Radius of the Earth at the Equator being allowed 3967,5 miles—Hence the Correction for the Height of the Pendulum above the Level of the Sea, will be 0,0016 of a Vibration.

The true number of Vibrations in 24 hours will therefore be

First	Set (*L.*)	86165,7093
Second	,, ,, ...	86169,0677
Third	,, ,, ...	86167,1098
Fourth	,, ,, ...	86167,2949
First	Set (*R.*)	86165,1396
Second	,, ,, ...	86165,5079
Third	,, ,, ...	86167,4250
Fourth	,, ,, ...	86167,4112

In London Latitude 51° 31′ 8,4″, the *Pendulum of Experiment* made 86073,14 Vibrations in 24 hours; the Thermometer being 47,8, and the Barometer 30,07 inches; the Height above the Level of the Sea 93 feet: Hence the Correction for the Buoyancy of the Atmosphere, allowing the *Mint Specific Gravity*, will be 0,7429; and that for the Height above the Sea + 0,05: The true Number of Vibrations in 24 hours will therefore be 86208,1879; the Square of which is 7432709401,3785.

The Length of the Seconds Pendulum in London at the Temperature of 59°, deduced from Captain *Kater's* Experiments, is 39,14953 inches.

Now 86208,1879² : 86400² :: 39,14953 : 39,2521101 inches, the Length of the Pendulum of Experiment.

Then by the *First Set* (*L.*) 86165² : 86400² :: 39,2521101 : 39,3198042998 the *Length of the Pendulum at Greenwich Lent.*

By the same Operation the *Length of the Pendulum at Greenwich Lent* by the *Second Set* (*L.*) is 39,3204015498. By the *Third* 39,3201926965. By the *Fourth* 39,3203039471 *Inches.*

Repeating the Operation, the *First Set* (*R.*) gives the Length of the Pendulum at *Greenwich Lent* 39,3202061918. The *Second* 39,3200845551. The *Third* 39,3201728674. And the *Fourth Set* 39,3201566060 *Inches.*

The sums of these will be—

Set (*L.*)
- First ... 39,3198042998
- Second .. 39,3204015498 — Mean 39,3201171958
- Third .. 39,3201926965
- Fourth .. 39,3203039471 — ,, 39,3201983720

Mean of the four Sets. 39,3201602677

Mean,

Sets (R.)
- First . . . 39,0393669918
- Second . . 39,0393185553 — Mean 39,0393427736
- Third . . 39,0391736574
- Fourth . . 39,0391276095 — = 39,0391706335

Mean of the four Sets (*R.*) . . 39,0391569904

Mean of " " (*L.*) . . 39,0391585577

Length of the Pendulum at Pole Gannok Lost by the Mean of all the Experiments. } Inches 39,0391577741

The Latitude of *Pole Gannok Lost*, according to the Mean of the Meridian Observations, as lately deduced, is 8° 1′ 48,78″ North.

Then by combining the London Observations and these at Gaunsur Lots, we have the *LENGTH of the PENDULUM at the EQUATOR* 39,0391599 Inches.

We next proceed to deduce the Length *of the Pendulum at Madras by the Specific Gravity found at the Mint.*

During the time of taking the *First Series* of Experiments at Madras, the Mean Height of the Thermometer was 83,15°, of the Barometer 29,788—the Number of Vibrations in 24 hours 86166,108. Hence we find that the Correction for the Buoyancy of the Atmosphere is +5,378. The Mean Height of the Thermometer during the time of taking the Second Series was 83,19°, of the Barometer 29,818, the Number of Vibrations in 24 hours 86166,048; and the Correction now deduced for the Buoyancy of the Atmosphere +5,378. The Correction for the Height above the level of the Sea, as formerly found, is +0,795. These Corrections being applied, we shall find the true Number of Vibrations in 24 hours by the *First Series* 86171,079; and by the *Second Series* 86170,921; the Mean being 86171,000.

Hence the Length *of the* Pendulum *at the* Madras Observatory, in Latitude 13° 4′ 8,1″ North by the *First Series* will be 39,0393567487; and by the *Second Series* 39,0393725153—the *Mean of both* being 39,0393596084 *Inches.*

Then by combining the London with the Madras Experiments, *and taking the* Length *of the* Pendulum *at the* Equator, *deduced from the* Gaunsur Lost Experiments,* *we find the diminution of* Gravity *from the* Pole *to the* Equator *to be* .0052736339; *and the* Ellipticity *of the* Earth $\frac{1}{230,81}$.

* The Length of the Pendulum at the Equator by Computation, with the data here given, will be 39,0391599514 Inches; differing from the measured 0,0008227442 of an Inch; the Deduction of Gravity from the Pole to the Equator, using the computed Length of the Pendulum will be, .0052727239, and the Ellipticity of the Earth $\frac{1}{230,17}$.

The following Portion of the Report, shews the Deductions from the Observations given in the former part of it, of the Geographical Situation, of Port Gamboa Light, of Rawsonian, and other Places visited on the Expedition.

Rates of Chronometers

at the

Marian Observatory.

		h.	m.	s.	
Longitude	=	5	21	25	E.
	=	Or 80°	17	21	

The Expedition taking its departure for Rawsonian.

Day of the Month.	Arrian		Canadian.	Remarks.
	No. 197.	No. 201.		
1822	s.	s.	s.	
Feb. 21 to 22	"	− 5,3	− 3,9	
22	"	21,3	10,8	
24	"	8,9	+ 1,8	
25	"	13,9	− 8,3	
26	+ 2,1	14,5	5,5	
27	5,9	11,8	4,6	
28	4,9	17,1	9,9	
March 1	5,4	14,9	2,8	
2	7,1	8,5	2,2	
3	5,8	4,2	1,0	
4	5,9	13,6	+ 1,9	
5	6,3	18,3	− 9,8	
6	4,3	21,8	6,8	
7	5,8	5,9	2,8	
8	6,1	14,7	6,9	
9	6,0	17,8	6,0	
10	5,4	+ 2,4	2,8	
11	1,8	− 2,8	9,9	
12	6,9	6,8	3,1	
13	8,9	5,1	1,9	
Mean Rate.	+ 5,09	−11,1	− 3,70	

Difference of Chronometers and Mean Time.

		h.	m.	s.
1822. March 13 at Noon, No. 197.	Fast for Mean Time	0	0	5,5
" " No. 201.	Slow for Mean Time	0	1	56,6
" " Rawsonian.	Fast for Mean Time	0	3	49,7

Rates of Chronometers

at the

Madras Observatory.

On the Return of the Expedition from Bencoolen.

Day of the Month.	Arnold No. 293.	Earnshaw.	Remarks.
1823	S.	S.	
June 5 to 6	−16,9	+ 7,8	*Chronometer 297 owing to an accident became useless some time before the Expedition returned to Bencoolen.*
7	17,0	11,0	
8	21,1	9,9	
9	18,4	13,6	
10	15,9	16,0	
11	17,8	14,2	
12	20,4	14,5	
13	17,8	19,2	
14	20,5	18,5	
15	15,2	15,8	
Mean Rate .	−17,45	+ 14,26	

Differences of Chronometers and Mean Time.

							h. m. s.				h. m. s.	
1823. June 6 at Noon, No. 221. Slow							2 39 15,5	Earnshaw. Fast			00 21 34,5	
7	»	»	»				2 39 29,5	»	»		00 21 35,5	
8	»	»	»				2 39 31,6	»	»		00 21 45,8	

Mean Declinations of Stars at the beginning of the Year 1768—some not visible in Europe*—from Observations, by *J. Goldingham, Esq.* F. R. S.

Names of Stars.	No. of Observations.	Mean Declination at the beginning of the year 1768.
		° ′ ″
α Ceduseï	8	59 58 37,8 s.
β Crucis	5	58 33 15,8
Antares	8	25 47 27,3
δ Scorpionis	9	22 53 41,8
Canopus	12	52 55 27,8
γ Navis	9	40 44 04,3
ε Crucis	9	60 37 13,3
ζ Crucis	5	56 57 19,8
ε Scorpionis	3	34 52 30,8
ζ Sagittarii	6	30 27 34,2
ζ Navis	9	32 57 10,8
ζ Navis	1	39 45 30,1
α Phœnicis	8	43 25 40,18
α Pavonis	4	57 52 20,3
ε Centauri	9	30 21 49,09
β Gruis	17	30 07 25,41
Achernar	13	58 17 33,08
α Columbæ	8	34 11 35,37
Sirius	9	39 25 31,28
β Columbæ	4	35 31 25,58
δ Phœnicis	4	45 49 19,20
γ Phœnicis	6	44 03 09,59
12 Eridani	10	39 48 35,87
2 Canis Maj.	6	25 01 20,13
α Canis Maj.	5	20 54 30,91
α Canis min.	10	5 53 01,25 n.
Capella	10	45 45 27,75
α Cygni	10	44 28 48,02

*Even lowered this Table, because the Declinations of those Stars, which are not visible in Europe, have been taken from it, in computing the Latitudes, and because the Table has not, as far as I know, been in print before, and therefore if required, could not have been referred to. The Declinations of those Stars visible in Europe, particularly of the Northern Stars, have been computed, from the Observations taken at the same time, and are given, chiefly with the view of shewing how far the other Declinations, used in computing the Latitudes, may be depended upon. Of course, whenever I could find Declinations, deduced from Observations with the large and valuable Instruments now in use in Europe, I have taken such in preference to my other Declinations. According to recent Observations by the Astronomer Royal with the large Circle now set up at Greenwich, the Declination of α Cassiopeiæ at the beginning of the year 1768, was 57° 21′ 5″,7; that of Capella 45° 45′ 27,5; and that of α Cygni 44° 28′ 50,8—differing from the Declinations in the above Table only 0″,31 for the first Star; 0″,25 for the second; and 1″,26 for the third—a most agreement, and scarcely to be expected in Observations, done when, as those in the above Table were, with a Sextant and Artificial Horizon 30 years ago; and the others with the great Instruments above-mentioned.

Latitude of the German Ocean.

By the Stars. (L.)

Time Watch.	Stars.	Meridian Altitude.	Corrected Reflection.	Mean Declination.	Variation.	Aberration.	True Meridian Altitude.	Zenith Distance.	True Declination.	Latitude North.
		° ′ ″	° ′ ″	° ′ ″	″	″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
Dec. 27	Arcturus	31 34 59,5 s.	1 05,9	20 09 38,2 n.	−7,4	+15,0	51 49 57,5 s.	38 10 08,7 n.	20 09 39,7 n.	0 01 57,3
	γ Pegasi	19 49 13 s.	0 43,3	14 14 11,7 n.	+5,1	9,3	49 45 59,8 s.	40 14 20,9 n.	14 14 13,9 n.	0 01 53,7
	Capella	14 14 15	0 38,3	"			48 13 59,7 s.	41 46 20,3	14 14 13,6	0 01 56,3
28	β Andromedæ	38 01 19	0 39,7	28 49 55,8	3,9	11,0	52 50 39,3 s.	37 09 21,7	28 49 51	0 01 57,3
	ζ Cassiopeiæ	29 43 16,5	1 05,7	59 58 39,9	7,1	17,0	50 48 38,8	39 11 07,8	59 58 03,1	0 01 55,6
	Arcturus	31 31 21,5 s.	1 23,8	20 09 38,2 n.	−7,4	15,1	51 49 57,3 s.	38 10 08,7 n.	20 09 43,9 n.	0 01 57,3
	γ Andromedæ	41 20 41 s.	2 05,8	41 28 41 n.	+7,3	11,5	49 59 55,8 s.	41 07 08,4 s.	41 29 09,3 n.	0 01 54,1
	γ Pegasi	27 18 17,5	1 10,1	14 14 15,0	5,1	12,2	37 18 07,8	52 55 53,0	14 14 13,9	0 01 53,9
	ζ Pegasi	47 06 13	0 43,8	9 43 16,9	5,1	9,6	46 43 29,8	43 16 30,9	9 43 15,0	0 01 53,7
	α Pegasi	19 49 13,7	1 01,3	14 13 51,4	5,2	9	48 01 45,7	41 14 46,3	14 13 49,8	0 01 53,3
1782 Jan. 6	Arcturus	31 31 21,5 s.	1 23,8	20 09 38,2 n.	−7,4	17,2	51 49 57,3 s.	38 10 08,7 n.	20 09 43,1 n.	0 01 57,6
	γ Andromedæ	41 20 41 s.	2 05,8	41 28 41,8 n.	+7,3	11,5	49 59 55,0 s.	41 07 07,4 s.	41 29 09,5 n.	0 01 57,1
	γ Pegasi	27 18 23	1 10,1	14 14 20,0	5,1	13,3	37 13 17,5	52 46 47,1	14 14 20,9	0 01 59,8
	ζ Pegasi	47 05 23	0 43,8	9 43 16,9	5,1	9,3	46 43 37,8	43 16 30,9	9 43 18,4	0 01 58,0
	α Pegasi	19 49 08	0 39	14 13 51,7	5,1	9,1	48 01 45,7	41 11 55,9	14 13 39,7	0 01 46,0
	ζ Pegasi	47 49 23,5	0 37,3	47 19 59	5,1	9,0	46 44 38,0	43 11 01,8	47 13 13	0 01 51,8
	ζ Pegasi	38 41 18,5	0 39	31 03 09,4	7,4	9,1	38 09 43,5	51 09 16,5	31 03 22,9	0 01 56,4
	Capella	45 14 17,5	0 38,8	"			44 12 01,0	45 46 59,0	45 46 16,6	0 01 57,6
	ζ Tauri	51 23 14,5	0 39	"			51 21 45,5	38 38 13,5	28 27 09,2	0 01 49,6
	α Columbæ	35 49 30,5	0 39,6	34 10 37,1 s.	−7,6	8,8	35 46 14,0 s.	54 13 45,1 s.	34 10 37,8 s.	0 01 23,9
	ζ Canis Maj.	28 17 58 s.	0 31,7	29 29 09	7,6	8,1	28 26 58,8	59 01 05,0	29 29 01,3	0 01 49,7
5	Capella	45 15 06,0 s.	0 38,3	"			44 13 08,0 s.	45 46 55,7 s.	45 46 16,7	0 00 59,0
	α Tauri	51 23 29	0 39	"			51 21 54	38 37 06	28 27 09,2	0 01 58,0
8	Arcturus	31 31 19,5 s.	1 23,8	20 09 38,1	−7,8	17,0	51 49 51,7 s.	38 10 08,7 n.	20 09 39,9 n.	0 01 58,2
	γ Andromedæ	41 20 45,5 s.	2 05,8	41 28 41,8 n.	+7,3	11,5	49 59 01,1 s.	41 07 10,9 s.	41 29 09,0 n.	0 00 59,6
7	α Pegasi	19 49 09	1 01,3	14 13 51,9	5,1	9,1	48 01 45,7	41 11 55,9 s.	14 13 49 s.	0 01 41,7
	ζ Pegasi	47 49 23,5	0 37,3	47 19 59,0	5	7,0	46 44 43,2	43 11 08,8 s.	47 13 13,0 s.	0 02 07,8
	Capella	45 14 17,5	0 38,3	"			44 13 01,2	45 46 58,8	45 46 17,6	0 01 58,1
	ζ Tauri	51 23 13	0 39	"			51 21 44	38 37 16	28 27 09,2	0 01 48,2
	α Columbæ	35 49 47,0 s.	0 39,6	34 10 37,0 s.	−8,0	8,8	35 46 07,4 s.	54 13 45,7 s.	34 10 37,4 s.	0 01 20,7
	ζ Canis Maj.	28 26 53 s.	0 31,7	29 29 09,0	7,8	8,1	28 25 53,8	59 02 06,9	29 29 01	0 01 48,8
	Capella	45 15 03	0 38,3	"			44 13 01,2	45 46 58,8	45 46 16,6	0 01 58,2
8	γ Andromedæ	41 20 41,5 s.	2 05,8	41 28 41,8 n.	+7,3	11,5	49 59 01,1 s.	41 07 10,9 s.	41 29 09,0 n.	0 00 58,6
	α Aquilæ	37 58 49,5	0 38,8	"			37 18 10,7	52 55 51,3 s.	37 37 37	0 01 48,7
	γ Pegasi	27 18 09	1 10,1	14 14 20,0	5,1	13,0	37 13 14,9	52 46 45,1	14 14 17,1	0 00 60
	ζ Pegasi	47 48 09,5	0 43,8	9 43 16,9	5,1	9,3	46 43 29,3	43 16 30,7	9 43 18,5	0 01 58,1
	α Pegasi	19 49 13,5	1 01,3	14 13 51,9	5,1	9,1	48 01 45,6	41 14 46,4	14 13 49,7	0 01 58,4
	ζ Pegasi	47 49 23	0 37,3	47 19 59,0	5,1	10,0	46 44 37,7	43 11 04,3	47 13 13,0	0 00 59
	ζ Pegasi	38 41 23	0 39	31 03 09,7	7,8	9,0	38 09 44	51 09 16	31 03 22,9	0 01 58,4

1803 Month.	Stars.	Meridian Altitude.	Corrected Reduction.	Mean Declination.	Variation.	Annual.	True Meridian Altitude.	Zenith Distance.	True Declination.	Latitude North.
		° ′ ″	″	° ′ ″	″	″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
Jan. 8	ε Persei ..	60 29 28,5 s.	+ 43,6	49 43 54,7 s.	+ 5,0	+ 7,8	50 29 31,7 s.	39 27 30,3 s.	49 59 58,5 s.	9 31 18,2
	Capella ..	44 18 18	+ 54,2	*			44 12 23,7	45 49 36,3	45 48 57,0	9 59 41,3
	β Tauri ..	53 53 18,3	+ 49	*			53 54 30,3	36 25 29,5	28 47 02,5	9 31 33
	δ Columbæ	34 09 22 s.	+ 39,5	35 37 49,8 s.	— 5,2	8,0	34 07 54,7 s.	55 52 05,3 s.	35 38 48,7 s.	9 31 53,8
	ζ Canis Maj.	30 30 18	+ 51,9	29 28 30,5	5,0	8,1	30 29 40,6	59 01 13,9	29 30 13	9 31 58,8
	Canopus ..	37 22 18	+ 38,6	52 20 15,3	5,4	8,2	37 22 56,4	52 37 03,6	52 20 13,3 s.	9 31 40,8
9	γ Andromedæ	48 29 30 s.	+ 46,4	41 28 41,8 s.	+ 7,7	11,5	48 27 31,0 s.	41 32 28,4 s.	41 28 00,0	9 30 32,2
	γ Persei ..	50 14 12	+ 18,1	50 18 09,3	8,1	12,8	50 13 09,9	39 46 57,1	50 18 47,2	9 31 58,1
	ε Persei ..	49 35 16	+ 46,9	49 28 09,9	8,1	9,6	49 35 29,9	40 18 27,0	40 18 03,9	9 31 57,0
10	ε Persei ..	49 49 27	+ 43,9	49 49 40,5	8,1	9,8	49 49 27,8	40 24 30,2	40 18 03,7	9 32 56,5
	ζ Persei ..	42 45 48	+ 37,2	42 52 03,7	8,1	10,0	42 45 30,7	47 11 01,3	47 13 13,4	9 30 30,1
	γ Persei ..	50 23 02	+ 43,9	50 29 24,0	8,0	7,8	50 23 19,2	39 37 40,9	39 29 35,4	9 30 58,0
	Capella ..	44 14 03,9	+ 54,2	*			44 13 31,1	45 46 28,9	45 46 37,3	9 59 08,1
	β Tauri ..	61 30 10	+ 49	*			61 30 49	28 29 11	28 27 03,6	9 31 56,5
11	ε Persei ..	49 49 12	+ 43,6	49 49 09,0	8,1	9,4	49 49 27,8	40 18 32,2	40 18 05,3	9 31 58,2
12	ε Persei ..	49 49 19	+ 43,2	49 49 32,7	8,1	9,1	49 49 30,7	40 21 45,3	40 18 20,0	9 31 56,0
13	Capella ..	44 14 03,8	+ 54,2	*			44 13 19,8	45 46 39,5	45 46 39,1	9 31 51,3
15	γ Persei ..	51 14 34	+ 50,1	51 18 09,5	8,1	10,5	51 18 03,9	38 40 36,1	38 40 51,4	9 31 51,7
	δ Persei ..	49 45 38,5	+ 45,8	49 36 09,1	8,1	9,8	49 45 31,2	40 24 09,7	40 18 19,0	9 31 50,8
	ε Persei ..	49 49 39	+ 41,3	49 49 08	8,1	8,6	49 49 37,7	40 21 49,0	40 18 49	9 31 57,2
	ζ Persei ..	50 41 39	+ 38	51 01 30	8,0	9,7	50 40 49	39 28 38	39 21 03,7	9 30 48,1
	ε Persei ..	50 23 08	+ 43,6	50 29 23,8	8,0	7,7	50 29 08,0	39 37 28,8	39 29 30,0	9 30 53,2
	Capella ..	44 14 21,6	+ 54,2	*			44 13 17,8	45 46 42,8	45 46 39,0	9 31 56,8
	β Tauri ..	61 30 30,8	+ 49	*			61 30 47,3	28 29 12,8	28 27 03,6	9 31 53,8
	α Canis Maj.	61 34 30,3 s.	+ 57,1	16 48 8,3 s.	— 4,3	6,8	61 34 06,7 s.	106 43 53,3 s.	16 41 20,4 s.	9 32 40,3
17	Capella ..	44 14 03,3 s.	+ 54,2	*			44 13 18,9 s.	45 46 41,1 s.	45 46 28,3	9 31 51,7
	β Tauri ..	61 30 10,3	+ 49,0	*			61 30 47,3	28 29 12,7	28 27 04 s.	9 31 51,3
	α Canis Maj.	61 34 30,3 s.	+ 57,1	16 48 8,3 s.	— 4,3	6,8	61 34 06,7 s.	106 43 53,3 s.	16 41 20,4 s.	9 32 40,3
	ζ Canis Maj.	60 16 39	+ 53,7	16 47 03,0	4,3	6,7	60 16 46,3	106 08 30,7	16 41 06,3	9 32 39,5
	ε Navis ..	55 11 51,5	+ 39,5	42 46 14	3,8	6,5	55 11 19	90 48 41	42 46 33	9 31 51
	κ Canis Maj.	60 02 11,5	+ 39,9	16 57 49,1	3,6	6,2	60 02 41,7	107 59 18,3	16 57 43,9 s.	9 31 58,5
18	ε Persei ..	49 49 10,5 s.	+ 40,3	49 53 19,7 s.	+ 8,1	8,4	49 49 13,9 s.	40 11 44,9 s.	40 13 29,9	9 33 34,4
	ζ Persei ..	50 41 14,5	+ 39	51 01 30,1	8,0	9,7	50 40 49,5	39 28 38,5	39 21 03,6	9 30 48,7
	γ Persei ..	49 49 51,5	+ 37,3	49 53 58,9	8,0	10,4	49 49 54,8	40 11 05,2	40 13 13,7	9 32 47,5
	Capella ..	44 14 51,5	+ 54,2	*			44 13 17,8	45 46 42,2	45 46 39,6	9 31 56,7
	β Tauri ..	61 30 09	+ 49	*			61 30 49	28 29 09	28 27 04	9 31 53
	α Columbæ	35 08 41,3 s.	+ 39,6	35 08 01,8 s.	— 5,3	8,0	35 08 05,9 s.	54 51 54,1 s.	35 08 20,9 s.	9 31 05,8
	δ Columbæ	34 09 04	+ 39,5	35 37 49,8	5,2	13,8	34 07 54,7	55 52 05,3	35 38 48,9	9 31 57,5
	ζ Canis Maj.	30 30 18	+ 51,7	29 28 30,5	5,0	8,2	30 29 40,7	59 01 13,9	29 30 14,4	9 32 47,5
	Canopus ..	37 22 18	+ 38,6	52 20 15,3	5,4	10,6	37 22 56,4	52 37 03,6	52 20 13,6	9 31 39,8
	κ Canis Maj.	61 34 41,3	+ 57,1	16 44 18,9	4,4	7,1	61 34 11,7	106 43 48,3	16 41 11,6	9 31 59,7
	ζ Canis Maj.	60 31 28	+ 53,7	16 47 03,5	4,3	7,0	60 31 05,3	106 08 54,7	16 57 09,5	9 31 45,5
	γ Navis ..	52 11 39	+ 39,5	42 46 14,1 s.	— 3,9	7,5	52 11 09,3	93 48 50,7 s.	42 46 37,6 s.	9 31 59,7
	κ Canis Maj.	60 06 39	+ 39,6	16 57 49,5	3,8	6,5	60 06 09,9	106 09 20,9	16 57 49,1	9 32 41,7
Feb. 6	ζ Canis Maj.	59 38 18	+ 51,1	16 59 08,8	3,4	11,0	59 38 43,9	106 01 15,9	16 59 59,4	9 31 51,8
	Canopus ..	37 03 51	+ 38,0	52 20 10,9	5,0	13,1	37 03 0,4	52 57 59,6	52 20 08,8	9 31 39,6
	ε Canis Maj.	52 14 18,3	+ 55,6	28 44 06,9	4,2	10,0	52 14 10,7	93 45 49,3	28 44 14,6	9 31 59,7

1822 Febr.	Stars.	Meridian Altitude.	Corrected Meridian Altitude.	Mean Declination.	Variation.	Annual Variation.	True Meridian Altitude.	Zenith Distance.	True Declination.	Latitude North.
		° ′ ″	° ′ ″	° ′ ″	″	″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
Feb. 9	γ Navis . .	58 11 38,5 s.	0 38,3	39 49 34,3 s.	— 3,9	+ 5,0	58 11 37,9 s.	89 48 23 s.	39 47 00,9 s.	0 01 47,8
	Castor . .	57 44 18 s.	0 33,3	"			57 43 44,9 s.	89 18 15,8 s.	39 25 04,5 s.	0 01 45,1
	Pollux . .	61 33 29	0 37,2	"			61 32 51,8	89 01 50,5	39 01 43,7	0 01 47,9
8	Capella . .	84 14 37,5	0 51,2	"			84 13 45,9	83 43 20,5	83 41 29,7	0 01 46,2
	β Tauri . .	61 30 35	0 39	"			61 29 56	89 03 16	39 01 20	0 01 56,8
	[Canis Maj. .	59 59 53 s.	0 33,9	59 49 07,8	— 5,4	+ 11,0	59 58 53,9 s.	89 51 31,0	39 50 09,8 s.	0 01 44
	Canopus . .	37 07 15	1 10,1	52 20 14,3	5,0	18,3	37 06 04,1	89 37 53,8 s.	52 36 23	0 01 21,0
	β Navis . .	62 58 18,8	0 47,1	48 09 30,0	5,8	15,7	62 57 31,8	63 04 26,7	48 02 44,0	0 01 34
	γ Canis Maj. .	61 31 45	0 39,8	59 14 18,2	4,5	10,6	61 31 13,6	89 33 44,5	59 14 33,8	0 01 39,8
	ε Canis Maj. .	63 31 57,5	0 43,7	59 07 55,8	4,5	9,7	63 31 31,8	89 08 49,5	59 07 05,5	0 01 26,7
	η Canis Maj. .	61 01 01,5	0 39,8	59 27 43,3	4,5	10,4	61 00 37,7	89 30 02,3	59 27 02,3	0 01 20
	Castor . .	57 46 37,5 s.	0 37,1	"			57 45 54,5 s.	89 18 05,7 s.	39 15 51,8 s.	0 01 54,7
	Pollux . .	61 35 19,5	0 39,8	"			61 34 40,7	89 01 43,7	39 01 43,7	0 01 51,8
	ζ Navis . .	50 38 18 s.	0 45,0	39 29 07,5 s.	+ 5,1	+ 7,1	50 37 33,1 s.	89 21 39,9 s.	39 20 26,8 s.	0 01 50,3
9	Capella . .	84 31 18 s.	0 54,3	"			84 30 23,7 s.	83 44 43,3 s.	83 43 29,3 s.	0 01 57,4
	β Tauri . .	61 32 21	0 39	"			61 31 42	89 03 09	39 01 43,8	0 01 56,8
	α Columbæ . .	35 48 39,3 s.	0 35,0	34 10 21,8	— 2,6	+ 6,0	35 48 08,9 s.	54 11 57,1 s.	34 10 21,7 s.	0 01 49,8
	β Aurigæ . .	45 07 26 s.	0 52,1	44 53 46,7 s.	+ 6,1	+ 6,2	45 06 46,8 s.	44 53 17,8 s.	44 53 03,1 s.	0 01 19,7
	ζ Canis Maj. .	30 29 30 s.	0 31,2	27 29 00,6 s.	— 5,0	+ 11,8	30 28 49,6 s.	89 01 31,0 s.	39 29 09,4 s.	0 01 40,6
	Canopus . .	37 23 08,5	1 10,6	52 20 18,3	5,1	18,3	37 21 57,9	89 38 02,1	52 36 03,1	0 01 39
	β Navis . .	40 58 28	0 49,4	48 09 30,2	5,8	15,7	40 57 38,6	63 04 20,4	48 02 40	0 01 41,4
	γ Canis Maj. .	61 14 58	0 39,6	59 14 18,4	4,5	11,3	61 14 19,0	89 33 31,5	59 14 33,9	0 01 39,6
	ε Canis Maj. .	63 14 41	0 43,7	59 07 55,9	4,6	9,7	63 14 13,3	89 08 44,7	59 07 05,7	0 01 25
	η Canis Maj. .	61 01 06	0 39,8	59 27 43,4	4,5	10,4	61 00 36,8	89 30 02,0	59 27 02,4	0 01 21,4
	Castor . .	57 48 58,5 s.	0 37,1	"	+ 5,1	+ 7,1	57 48 09,0 s.	89 18 09,7	39 15 08,5 s.	0 01 51,8
	Pollux . .	61 35 41	0 39,8	"			61 35 19,0	89 01 47,6 s.	39 01 46,6	0 01 58
	ζ Navis . .	50 38 18 s.	0 45,0	39 29 30,0	— 5,1	+ 7,0	50 37 30,1 s.	89 21 39,9 s.	39 20 26,8 s.	0 01 49,1
	β Navis . .	62 59 39,5	0 59,8	48 09 01,5	— 5,8	+ 15,8	62 58 01,7	63 04 58,3	48 02 44,8	0 01 47,2
	β Navis . .	55 35 30	1 19,8	48 09 30,9	— 5,7	+ 15,8	55 34 10,3	54 01 36,9	48 02 41	0 01 35,8
	γ Canis Maj. .	61 39 30 s.	0 39,8	59 14 18,3 s.	+ 4,5	— 11,3	61 38 49,1 s.	89 33 44,5 s.	59 14 33,8 s.	0 01 39,4
10	α Columbæ . .	55 48 40 s.	0 55,6	34 10 01,1 s.	— 2,5	+ 6,0	55 48 01,4 s.	54 11 55,6 s.	34 10 22,9 s.	0 01 49,9
	β Aurigæ . .	45 07 27,3 s.	0 52,1	44 53 46,8 s.	+ 6,1	+ 6,2	45 06 54,3 s.	44 53 25,7 s.	44 53 03,1 s.	0 01 53,9
	ζ Canis Maj. .	30 29 25 s.	0 31,2	27 29 00 s.	— 5,0	+ 11,8	30 28 53,8 s.	89 01 31,0 s.	39 29 09,4 s.	0 01 39,6
	Canopus . .	37 23 19	1 10,6	52 20 18,4	5,1	18,3	37 22 08,0	89 38 02,0	52 36 03,0	0 01 37,2
	β Navis . .	40 58 30	0 49,4	48 09 30,3	5,8	15,8	40 57 40,8	63 04 18,2	48 02 41,2	0 01 34,1
	γ Canis Maj. .	61 14 53	0 39,6	59 14 18,5	4,5	11,3	61 14 14,0 s.	89 33 31,5	59 14 33,8	0 01 39,3
	ε Canis Maj. .	63 14 46	0 43,7	59 07 55,9	4,6	10	63 14 02,3 s.	89 08 49,7	59 07 05,9	0 01 37,0
	Castor . .	57 48 47,5 s.	0 37,1	"			57 48 04,5 s.	89 18 09,7 s.	39 15 08,4 s.	0 01 39,7
	Pollux . .	61 35 40,5	0 39,8	"			61 35 18,7	89 01 43,7	39 01 43,8	0 01 57,6
	ζ Navis . .	50 38 17,5 s.	0 45,0	39 29 30,5	— 5,0	+ 8,0	50 37 32,5 s.	89 21 39,9 s.	39 20 26,8 s.	0 01 45
	γ Navis . .	62 59 39,5	0 59,8	48 09 01,5	— 5,8	+ 15,8	62 58 01,7	63 04 58,3	48 02 44,8	0 01 50,0
11	Capella . .	84 14 00 s.	0 54,3	"	+ 5,1	+ 7,0	84 13 05,7 s.	83 43 43,3 s.	83 41 29,3 s.	0 01 51,3
	β Aurigæ . .	45 07 27,0	0 52,1	44 53 46,9 s.	+ 6,1	+ 6,2	45 06 34,9	44 53 25,1	44 53 03,2	0 01 51,9
	ζ Canis Maj. .	30 29 22,5 s.	0 31,2	27 29 00,7 s.	— 5,0	+ 11,8	30 28 51,3 s.	89 01 31,0 s.	39 29 09,4 s.	0 01 39,4

1803 Month.	Stars.	Meridian Altitude.	Corrected Meridian.	Mean Declination.	Semidiam.	Augmentat.	True Meridian Altitude.	Zenith Distance.	True Declination.	Latitude North.
		° ′ ″	′ ″	° ′ ″	″	″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
Feb. 11	Canopus . .	37 28 10 s.	1 10,6	52 56 13,6 s.	−5,1	+15,7	37 21 35,4 s.	89 38 05,6 s.	52 26 03,0 s.	0 01 57,4
	ε Canis Maj.	16 14 27,3	0 09,8	69 44 09,7	4,2	11,9	16 14 07,2	89 45 52,8	29 44 13,0	0 01 56,2
	β Canis Maj.	62 31 45	0 05,7	50 07 10,3	4	10	62 31 10,3	88 09 48,7	50 07 50,1	0 01 59,8
	Castor . .	37 46 07,3 s.	0 23,9	*	−	−	37 45 54,2 s.	89 14 05,7 s.	50 14 09,8 s.	0 01 58,7
	Pollux . .	31 33 48,6	0 09,6	*			31 33 13,7	89 04 46,3	28 06 43	0 01 57,7
	ζ Navis . .	50 06 09 s.	0 45,9	39 58 05,7	9,2	10,4	50 07 30,1 s.	89 59 05,2 s.	39 59 41,8 s.	0 01 59,9
	γ Navis . .	43 10 09,3	0 30,8	46 07 01,8	−3,0	−8,8	43 09 56,7	46 50 04,2	46 57 09,1	0 01 56,7
	ι Navis . .	32 53 55	1 12,8	54 02 52,6	8,7	9,0	32 54 33,9	54 05 23,8	54 03 41,7	0 01 54,1
12	Capella . .	44 14 02 s.	0 54,3	*	+	+	44 13 08,7 s.	45 46 51,3 s.	45 45 40,5 s.	0 01 49,5
	β Tauri . .	28 25 22	0 09	*			28 25 04	89 34 56	28 27 01,5	0 00 58,5
	ε Aurigæ . .	45 07 20,9	0 03,4	44 55 10,8 s.	8,1	8,7	45 06 49,3	44 53 37,9	44 55 29,8	0 00 51,2
	ζ Canis Maj.	30 50 19 s.	0 31,8	29 09 30,8 s.	−3,2	+19,8	30 26 46,8 s.	29 01 13,0 s.	29 09 30 s.	0 01 43,8
	Canopus . .	37 23 05,5	1 10,6	52 56 13,7	5,1	15,8	37 21 54,9	52 26 05,0	52 26 03,8	0 01 51,9
	ι Navis . .	45 56 08	0 49,1	43 09 26,9	8,2	14,5	45 52 18,6	43 06 41,4	43 08 45,5	0 01 55,6
	Pollux . .	31 33 33,3 s.	0 09,8	*	+	+	31 33 08,7 s.	89 04 53,3 s.	28 06 44 s.	0 01 53,7
	ζ Navis . .	50 28 12 s.	0 45,9	39 58 05,8	9,2	10,3	50 07 09,2 s.	89 59 20,8 s.	39 59 48,1 s.	0 01 59,9
	γ Navis . .	43 10 09	0 30,8	46 07 01,8	−3,0	+8,8	43 09 33,9	46 50 26,8	46 57 09,8	0 01 56,8
	ι Navis . .	32 01 05,3	1 12	54 02 08,4	8,0	2,0	32 59 49,5	54 01 11,5	54 02 29,1	0 01 58,8
13	Capella . .	44 14 05,3 s.	0 54,3	*			44 13 10,3 s.	45 46 49,5 s.	45 45 40,0 s.	0 01 51,1
	β Tauri . .	28 25 19	0 09	*			28 24 58	89 35 02	28 27 04,5	0 00 58,5
	ζ Canis Maj.	30 50 05,5 s.	0 31,8	29 09 08,3	−3,2	+19,9	30 26 40,2 s.	29 01 30,7 s.	29 09 30,0 s.	0 01 40,5
	ε Aurigæ . .	45 07 09 s.	0 03,4	44 55 10,8 s.	8,0	8,9	45 06 24,6 s.	44 53 59,4	44 55 29,8 s.	0 00 55,8
	Canopus . .	37 23 09 s.	1 10,6	52 56 14 s.	−5,1	+15,6	37 21 57,4 s.	52 26 05,6	52 26 04,2 s.	0 01 58,2
	ι Navis . .	45 56 15,5	0 49,1	43 09 26	8,2	14,7	45 52 09,1	43 06 29,9	43 08 46,0	0 01 47,8
	ε Canis Maj.	31 14 49,3	0 09,8	29,44 08	4,2	11,4	31 14 10,7	58 45 49,2	29 44 16,1	0 01 53,9
	β Canis Maj.	62 31 51,5	0 05,7	50 07 03,8	4,0	10,3	62 31 09,6	50 06 56,9	50 07 10,3	0 01 59,7
	α Navis . .	32 11 49	1 09,8	60 48 54,4	8,0	19,0	32 11 09,1	30 49 50,9	30 47 19,0	0 01 50,1
	Pollux . .	31 29 26 s.	0 09,8	*	+	+	31 29 07,2 s.	89 04 53,2 s.	28 06 44 s.	0 01 53,2
	ζ Navis . .	50 06 03 s.	0 45,9	39 58 05,1	9,2	10,7	50 07 09,4 s.	89 59 05,4 s.	39 59 48 s.	0 01 57,0
	Canopus . .	37 23 03,5 s.	0 10,6	52 56 13,6 s.	+5,1	−15,6	37 21 57,4 s.	52 26 05,6	52 26 04,2 s.	0 01 58,8
	ι Navis . .	45 56 13	0 49,1	43 09 26,9	+8,2	−14,7	45 52 09,1	43 06 29,9	43 08 46,0	0 01 47,8
	ε Canis Maj.	31 14 49,3	0 09,8	29,44 08	4,2	11,4	31 14 10,7	58 45 49,2	29 44 16,1	0 01 53,9
	β Canis Maj.	62 31 51,5	0 05,7	50 07 03,8	4,0	10,3	62 31 09,6	50 06 56,9	50 07 10,3	0 01 59,7
	α Navis . .	32 11 49	1 09,8	60 48 54,4	8,0	19,0	32 11 09,1	30 49 50,9	30 47 19,0	0 01 50,1
	Pollux . .	31 29 26 s.	0 09,8	*	+	+	31 29 07,2 s.	89 04 53,2 s.	28 06 44 s.	0 01 53,2
	ζ Navis . .	50 06 03 s.	0 45,9	39 58 05,1	9,2	10,7	50 07 09,4 s.	89 59 05,4 s.	39 59 48 s.	0 01 57,0
15	Canopus . .	37 23 01,5	1 10,6	52 56 13,6	−5,1	−15,7	37 21 57,4 s.	52 26 05,6	52 26 04,2 s.	0 01 58,8
20	ε Canis Maj.	30 50 18	0 31,8	29 09 18,4	3,1	11,9	30 26 46,8	59 01 13,2	29 09 30,0	0 01 43
	Canopus . .	37 22 59,5	1 10,6	52 56 13,6	5,1	15,5	37 21 54,9	52 26 05,1	52 26 04,6	0 01 58,5
	ι Navis . .	45 56 13	0 49,4	43 09 26,9	8,2	14,1	45 51 53,6	43 04 55,4	43 08 47,0	0 01 49,4
	ε Canis Maj.	31 14 53	0 09,8	29 44 08,9	4,4	11,8	31 14 10,9	58 45 54,9	29 44 18,7	0 01 56,1
	β Canis Maj.	62 31 53	0 05,7	50 07 04,9	4,8	10,5	62 31 17,3	50 06 44,7	50 07 10,6	0 01 59,1
	α Navis . .	32 11 49,3	0 09,8	30 48 54,4	8,0	18,8	32 11 09,6	30 48 50,4	30 47 19,0	0 01 51,4
	ι Canis Maj.	31 06 09	0 09,6	29 37 03,0	3,8	11,9	30 29 01,9	59 29 58,1	29 37 04,1	0 01 57,7
	Castor . .	37 46 03,5 s.	0 23,9	*			37 44 50,2 s.	89 14 05,7 s.	50 14 09,8 s.	0 01 58,6
	Pollux . .	31 33 46,5	0 09,6	*			31 33 11,7	89 04 46,3	28 06 44,1	0 01 56,3
27	Capella . .	44 14 08	0 54,3	*			44 13 13,7	45 46 46,3	45 45 41,7	0 01 54,3

1672 Month.	Stars.	Meridian Altitude.	Corrected Collimation.	Mean Declination.	Nutation.	Aberration.	True Meridian Altitude.	Zenith Distance.	True Declination.	Latitude North.
		° ′ ″	″	° ′ ″	″	″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
Feb. 27	ζ Tauri . .	61 25 35,5 s.	0 19		—	+	61 24 16,5 s.	28 35 43,5 s.	32 37 59,1 s.	3 02 43,5
	ε Columbæ . .	61 45 29 s.	0 23,5	34 16 20 s.	5,1	16,1	62 47 57,6 s.	34 12 57,6 s.	34 19 37 s.	3 03 36,6
	β Antlia . .	61 37 30,5 s.	0 23,4	34 31 16,3 s.	+ 5,0	7,9	62 56 27,1 s.	34 33 29,5 s.	34 33 33,3 s.	3 03 36,0
	Canopus . .	37 33 08 s.	1 19,6	52 50 13,4 s.	— 3,8	17,3	37 31 37,3 s.	52 28 02,6 s.	52 30 55,7 s.	3 01 35,9

Note. The Numbers in the Column of "Mean Declination" are placed to shew, that the Declinations were taken from the Nautical Almanac; being there corrected for Nutation and Aberration.

Latitude. By the Sun—South of the Zenith.

1672 Month.	Limb.	Meridian Altitude.	Corrected Reflection.	Parallax.	Sun's Semi Diameter.	True Meridian of Sun's Centre.	Zenith Distance.	Declination.	Latitude North.
		° ′ ″	′ ″	+ ″	+ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
Dec. 29	L. L.	66 14 39,5 s.	0 53	0 09	16 17,6	66 29 51,1 s.	23 29 59,9 s.	23 27 16,1 s.	0 01 55,8
30	L. L.	66 13 49	0 53,5	0 09	16 17,7	66 31 20,9	23 28 20,8	23 27 00,7	0 01 19,1
31	L. L.	66 16 27,5	0 53,0	0 09	16 17,7	66 29 05,3	23 27 35,7	23 25 54	0 01 41,7
Jan.	L. L.	66 16 58	0 53	0 09	16 17,7	66 28 14,7	23 25 43,3	23 24 59,8	0 01 15,7
27	L. L.	66 09 12,5	0 52,8	0 09	16 17,7	66 20 38,8	23 23 47,0	23 23 17,8	0 01 34,8
30	L. L.	66 09 15	0 53,3	0 09	16 17,8	66 45 11,3	23 13 49,5	23 13 13,5	0 01 56
31	L. L.	66 23 05	0 53,8	0 09	16 17,8	66 49 04	23 10 56	23 09 13,5	0 01 39,5
1672 Jan. 1	L. L.	66 27 25	0 53,3	0 09	16 17,8	66 53 39,9	23 08 35,5	23 07 01,1	0 01 33,4
2	L. L.	66 28 00	0 53,6	0 09	16 17,8	66 58 19,8	23 04 40,8	23 03 01	0 01 39,8
5	L. L.	67 00 01	0 53,3	0 09	16 17,7	67 03 08,4	22 57 39,6	22 55 08,9	0 01 37,4
6	L. L.	67 00 30	0 53,3	0 09	16 17,7	67 03 37,8	22 56 22,0	22 54 51,1	0 01 41,8
9	L. L.	67 09 03,5	0 53,5	0 09	16 17,6	67 11 09,1	22 44 14,9	22 42 37,3	0 01 36,8
10	L. L.	67 07 53	0 53,0	0 09	16 17,5	67 10 37,3	22 43 27,4	22 41 53,8	0 01 44
11	L. L.	67 05 53	0 53,8	0 09	16 17,5	67 08 02,7	22 42 37,3	22 40 48,8	0 01 36,8

Latitudes of Four Equator Last.

By the Stars. (B.)

Days Month.	Stars.	Meridian Altitude.	Corrected Refraction.	Mean Declination.	Nutation.	Aberration.	True Meridian Altitude.	Zenith Distance.	True Declination.	Latitude North.
		° ′ ″	″	° ′ ″	″	″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
Jan. 16	a Columbæ . .	55 49 25	25,0	34 33 07,31	−8,20	+3,68	55 47 49,8	34 12 10,6	34 19 03,8	0 1 47,4
17	Capella . .	44 14 35	34,72	"			44 13 49,97	45 46 09,3	45 46 58,1	0 0 18,27
19	Aldebaran . .	73 33 45	15,07	"			73 33 59,93	16 6 20,07	16 8 51,31	0 0 51,24
	Rigel . .	73 30 00	15,33	"			73 29 44,67	16 29 53,3	16 28 53,6	0 1 39,3
21	Capella . .	44 14 45	34,84	"			44 13 58,16	45 46 09,15	45 46 58,1	0 0 29,24
27	Canopus . .	37 98 58,5	108,04	52 56 13,51	8,19	−1,01	37 99 53,46	52 57 56,54	52 56 1,11	0 1 15,43
	Rigel . .	73 29 58,5	28,83	"			73 29 31,37	16 29 49,5	16 28 49,5	0 1 25,0
Feb. 6	Canopus . .	37 93 58,5	79,06	52 56 13,51	8,01	0,05	37 99 51,01	52 57 56,99	52 56 00,97	0 1 39,74
	a Canis Maj. .	61 15 19,5	20,77	16 44 6,51	8,20	0,04	61 14 49,3	28 45 31,3	28 45 9	0 1 9,3
	Aldebaran . .	73 32 42,0	14,3	"			73 33 27,70	16 6 20,67	16 8 51,28	0 0 23,72
	Capella . .	44 14 40,33	34,72	"			44 13 54,8	45 46 05,2	45 46 53,6	0 0 35,4
	Canopus . .	37 93 39,83	79,07	52 56 13,51	8,01	0,17	37 99 34,40	52 57 25,54	52 56 00,13	0 1 39,47
	a Canis Maj.	61 15 4,33	20,7	16 44 6,51	8,21	0,22	61 14 38,89	28 45 39,17	28 44 9,04	0 1 39,13
	a Canis Maj. .	61 15 8,33	20,7	16 7 1,53	8,20	0,17	61 14 43,24	28 6 16,66	28 6 53,19	0 1 36,47
	a Canis Maj. .	61 1 39,33	20,64	16 27 48,09	8,21	0,18	61 00 59,60	28 29 00,61	28 27 27,47	0 1 32,14
	Castor . .	32 49 59,33	32,31	"			32 46 9,39	57 13 52,09	57 13 4,42	0 0 16,71
	Pollux . .	61 28 19,33	29	"			61 25 50,33	28 34 9,67	28 33 43,7	0 0 34,95
9	Capella . .	44 13 47,33	34,62	"			44 13 12,71	45 46 47,29	45 46 40,7	0 0 25,1
	Pollux . .	61 25 39,33	29,02	"			61 25 10,31	28 34 49,6	28 33 43,9	0 1 34,8
10	Canopus . .	37 93 58,33	107,34	52 56 13,51	8,07	0,20	37 99 38,96	52 57 01,74	52 56 00,02	0 1 21,72
11	Capella . .	44 14 15,4	32,61	"			44 13 42,79	45 46 17,61	45 46 40,79	0 0 3,17
	Canopus . .	37 93 39,9	107,3	52 56 13,51	8,07	0,05	37 99 23,24	52 57 16,76	52 56 00,01	0 1 20,9
	a Canis Maj. .	61 14 39,4	20,53	16 44 6,49	8,18	0,20	61 14 19,87	28 45 39,13	28 44 7,19	0 1 36,94
21	Capella . .	44 14 23,33	34,09	"			44 13 49,24	45 46 10,76	45 46 40,8	0 0 29,1
	a Tauri . .	61 30 23,33	29,66	"			61 30 54,67	28 29 05,33	28 27 8,81	0 1 36,69
	Canopus . .	37 93 39,83	107,15	52 56 13,28	8,05	0,10	37 99 31,39	52 57 28,61	52 56 00,91	0 1 27,78
24	Canopus . .	37 93 43,83	108,21	52 56 13,28	8,01	0,0	37 99 43,50	52 57 16,50	52 56 00,69	0 1 22,69
	Pollux . .	61 28 10	29,15	"			61 28 40,9	28 34 19,0	28 33 44,05	0 0 55,05
25	Canopus . .	37 98 8,5	108,15	52 56 13,28	8,05	0,07	37 99 51,79	52 56 7,95	52 56 00,67	0 0 51,28
28	a Tauri . .	61 29 38	28,9	"			61 29 09,8	28 29 50,2	28 27 4,35	0 0 5,85
March 3	Castor . .	32 48 51,33	32,30	"			32 46 18,30	57 13 41,74	57 13 4,6	0 0 34,86
	Pollux . .	61 28 39,33	29,31	"			61 28 9,94	28 34 50,06	28 33 43,5	0 1 36,4

Latitude.

By the Sun—South of the Zenith. (*R.*)

1815 Month.	Limb.	Meridian Altitude.	Corrected Refraction.	Parallax.	Sun's Semi Diameter.	True Meridian Altitude of	Zenith Distance.	Corrected Declination.	Latitude North.
		° ′ ″	−	+	−	° ′ ″	° ′ ″	° ′ ″	° ′ ″
Jan. 11	U. L. . . .	68 18 47,2	20,95	3,2	16 17,5	68 2 11,95	21 57 48,05	21 56 00,5 n.	00 1 47,55
22	U. L. . . .	70 10 40	18,9	3	16 16,7	69 54 7,4	20 5 52,6	20 4 30,05	00 1 21,55
24	U. L. . . .	70 51 7,5	17,38	2,8	16 16,4	70 34 36,3	19 25 23,7	19 23 31,2	00 1 52,5
27	L. L. . . .	71 3 00	17,53	2,8	+ 16 16,1	71 19 1,37	18 40 58,63	18 20 19,5	00 1 39,13
28	U. L. . . .	71 50 52,5	16,69	2,6	− 16 15,9	71 34 22,5	18 25 37,5	18 23 54,7	00 1 42,8
29	U. L. . . .	72 7 7,5	16,44	2,6	16 15,8	71 50 37,8	18 9 22,2	18 8 10,2	00 1 12,0
30	U. L. . . .	72 22 33,75	16,15	2,53	16 15,6	72 6 4,53	17 53 55,47	17 52 5,7	00 1 49,77
31	L. L. . . .	72 6 51,25	16,34	2,6	+ 16 15,5	72 22 53	17 37 7	17 35 41,9	00 1 25,1
Feb. 5	L. L. . . .	73 33 7,2	16	2,2	16 14,7	73 49 8,1	16 10 51,9	16 9 11,4	00 1 40,5
8	U. L. . . .	75 1 10	13,85	2	− 16 14,1	74 44 44,15	15 15 15,85	15 12 52,5	00 1 23,05
9	U. L. . . .	75 19 47,5	13,62	2	16 4	75 3 21,88	14 56 38,12	14 54 55,05	00 1 43,07

Results of the Observations

for the

Latitude of Pulo Gaunean Lout. (L.)

By the Northern Stars.	°	′	″	By the Southern Stars, and Sun South of the Zenith.	°	′	″
γ Andromedæ	0	01	58,1 n.	Achernar	0	01	37,5 n.
	0	01	57,1		0	01	37,5
	0	02	09,6		0	01	37,6
	0	02	14,7		0	01	38,5
	0	02	12,2	α Columbæ	0	01	36,7
β Andromedæ	0	01	49,3		0	01	39,9
ζ Cassiopeiæ	0	01	35,9		0	01	29,9
α Arietis	0	01	49,7		0	01	25,4
γ Persei	0	01	53,3		0	01	22,8
	0	01	50,8	β Columbæ	0	01	19,6
	0	02	00		0	01	23,5
	0	01	50,1	ζ Canis Maj.	0	01	49,7
	0	01	55,3		0	01	47,9
δ Persei	0	01	53,7		0	01	56,7
	0	01	53,7		0	01	41,8
	0	02	02,2		0	01	51,8
	0	02	00,1		0	01	42
	0	01	57,6		0	01	49,8
	0	01	52,5		0	01	36,6
	0	01	53,3		0	01	38,9
	0	01	56,9		0	01	43,9
α Persei	0	01	53,3		0	01	40,5
	0	01	46,6		0	01	44
	0	01	41,7	ζ Canis Maj.	0	01	50,5
	0	01	51,4		0	01	45,9
	0	01	50,9		0	01	38,7
	0	01	57,7		0	01	35
	0	01	54,4		0	01	29,8
ζ Persei	0	02	06,4		0	01	30,6
	0	02	14,1		0	01	39,7
	0	02	10,1		0	01	30,1
	0	02	02,3	ρ Navis	0	01	39,4
ξ Persei	0	01	51,2		0	01	44,3
	0	02	07,8	Canopus	0	01	35,5
	0	02	08		0	01	40,4
	0	02	03,1		0	01	38
	0	02	07,5		0	01	38,8
ι Persei	0	02	12,2		0	01	32,6
	0	02	10,6		0	01	39
	0	02	11,1		0	01	37,3
Capella	0	01	56,3		0	01	32
	0	01	57,8		0	01	41,2
	0	02	01,9		0	01	38,3
	0	01	58,7		0	01	35,6
	0	02	01,3		0	01	36,9
	0	02	09,3	ι Canis Maj.	0	01	42,9

By the Northern Stars.		*By the Southern Stars, and Sun South of the Zenith.*	
	° ′ ″		° ′ ″
Capella	0 01 51,3	α Canis Maj.	0 01 50,1
	0 01 50,8		0 01 50,7
	0 01 51,7		0 01 55,7
	0 01 50,7		0 01 55,9
	0 01 59,9		0 01 56,5
	0 01 57,4		0 01 55,4
	0 01 51,5		0 01 50,7
	0 01 49,5		0 01 52,8
	0 01 51,1		0 01 56,1
	0 01 54,5	ν Canis Maj.	0 01 55,5
β Tauri	0 01 48,8		0 01 41,7
	0 01 58,8		0 01 59
	0 01 48,3		0 01 51,8
	0 01 58		0 01 57,3
	0 01 59,6	ι Navis	0 01 55,8
	0 01 51,4		0 01 56,3
	0 01 51,5	κ Navis	0 01 51
	0 01 44		0 01 59,2
	0 01 50,5		0 01 [illegible]
	0 01 56,2		0 01 48,1
	0 01 49,5		0 01 55,1
	0 01 52,2	ζ Navis	0 01 59
	0 01 60,9		0 01 49,8
α Aurigæ	0 01 51,7		0 01 54,1
	0 01 45,8		0 01 53,6
	0 01 54,9		0 01 47,9
	0 01 51,3		0 01 48,3
	0 01 55,6	ε Navis	0 01 55,7
	0 01 56,8	η Navis	0 01 45,9
Pollux	0 01 43,9	Sun	0 01 59,8
	0 01 57,4		0 01 55,1
	0 01 56		0 01 41,7
	0 01 57,6		0 01 58,7
	0 01 57,7		0 01 54,8
	0 01 50,7		0 01 56
	0 01 53,8		0 01 59,2
	0 01 54,1		0 01 55,6
Castor.	0 01 45,1		0 01 59,8
	0 01 54,7		0 01 57,8
	0 01 54,8		0 01 41,5
	0 01 58,7		0 01 59,8
	0 01 58,7		0 01 41
	0 01 57,6		0 01 56,8
ε Ursæ Maj.	0 01 58,4		
	0 01 [illegible]		
Mean . . .	0 01 58,37	Mean . .	0 1 59,19

	° ′ ″
Latitude of Pulo Gaunan Lout by the Northern Stars . .	0 1 58,37 n.
do. do. Southern Stars . .	0 1 59,19
Mean	0 1 58,78 n.

By combining the Assistant Robinet's Observations with these, in the manner the whole 1733 Results would have been combined, if taken by one Observer, we get 1° . 10,1' for the Latitude of Pelo Gavenah Last—differing only 0',8 from the above Result, which I have preferred hereto, as Lacaille's Observations are very numerous, and so good, that very few indeed were rejected on account of their Results differing from the Mean. This was not the case with Robinet's Observations; the Latitude by those of his not rejected, differs, however, only about 6 seconds from that above.

Results. (B.)

By the Northern Stars.	°	'	"
Capella	0	2	39,27 n.
Capella	0	2	39,74
Aldebaran	0	2	37,48
Aldebaran	0	2	39,76
Capella	0	2	30,4
Castor	0	2	39,75
Pollux	0	2	34,19
Capella	0	2	39,1
Pollux	0	1	34,4
Capella	0	2	3,37
Capella	0	2	30,1
β Tauri	0	1	30,02
Pollux	0	2	30,23
β Tauri	0	2	3,18
Castor	0	2	34,86
Pollux	0	1	33,4
Mean . .	0	2	14,8

By the Southern Stars, and Sun South of the Zenith.	°	'	"
ε Columbæ	0	1	47,8 n.
Sirius	0	1	25,5
Canopus	0	1	15,63
Sirius	0	1	25,9
Canopus	0	1	26,78
ε Canis Maj.	0	1	9,5
Canopus	0	1	33,81
β Canis Maj.	0	1	21,67
ε Canis Maj.	0	1	23,13
η Canis Maj.	0	1	27,58
Canopus	0	1	21,72
Canopus	0	1	26,9
ε Canis Maj.	0	1	16,58
Canopus	0	1	29,76
Canopus	0	1	23,65
Canopus	0	1	26,26
Sun	0	1	47,35
	0	1	21,35
	0	1	25,5
	0	1	29,15
	0	1	49,8
	0	1	19
	0	1	23,77
	0	1	27,1
	0	1	46,5
	0	1	23,23
	0	1	43,07
Mean . .	0	1	29,7

	°	'	"
Latitude of Pelo Gavenah Last by the Northern Stars . .	0	2	14,8
do. do. Southern Stars . .	0	1	29,7
Mean	0	1	54,8 n.

RESULTS of the OBSERVATIONS

At Pulo Condore Light

For the Time, Longitude, and Rates of the Chronometers. (L.)

1822.	Time by Chronometer 201.						Equation to equal Altitudes	Apparent Noon by Chronometer 201.	Equation of Time.	Mean Noon by Chronometer 201.	Chronometer Slow on Fast for Mean Time.		Rate per Day.	
Month.	Forenoon.		Afternoon.		Mean.						201 Slow.	Elevation Slow	201.	Elevation
	h. ' "		h. ' "		h. ' "		"	h. ' "	' "	h. ' "	h. ' "	h. ' "	"	"
Dec. 24	7 20	09,1	11 38	19,0	9 47	03,6	0,1	9 47	02,8	9 47	41,5	0 18	35,2	0 26	06,0		
25	7 21	11,5	11 33	24,0	9 47	09,1	0,1	9 47	08,8	9 47	09,1	0 18	29,9	0 26	12,0	− 08,7	+ 13,3
			by Eevation						*Eevation*		*Eevation*					20,0	10,5
26	9 13	31,0	1 25	42,0	11	36	37	0,1	11	34	30,0	0	39,5	11	33	28	0	13	10,5	0	30	00,0		
27	9 14	17,4	1	00	23			0,0	11	35	22,1	01	09,2	11	34	13,0	0	13	25,1	0	33	49	34,0	15,0
28	9 17	10,0	1	01	13,5			0,0	11	36	09,3	01	57,3	11	34	31,8	0	14	00,2	0	33	18,8	31,1	17,9
29	9 16	38,7	1	02	10,8			0,0	11	36	23,9	02	05,8	11	35	18,7	0	14	32,3	0	34	41,3	15,2	15,0
30	9 17	43,7	1	03	07,3			0,0	11	35	25,5	02	13,8	11	33	11,7	0	14	45,6	0	34	57,4	16,3	15,7
31	9 18	20,1	1	04	17,6			0,0	11	36	18,8	02	21,5	11	34	57,3	0	14	59,6	0	35	17,8	20,2	15,9
1823. Jan. 1	9 19	43,7	1	05	31,8			0,1	11	37	07,3	02	29,8	11	34	37,4	0	15	00,6	0	35	37,8	19,9	15,6
2	9 20	20,1	1	06	17,6			0,1	11	37	07,8	02	37,7	11	34	30,0	0	15	00,0	0	35	30,0	19,8	15,0
3	9 21	00,1	1	07	00,6			0,1	11	37	08,4	02	45,6	11	34	22,8	0	15	00,6	0	35	23,4	19,8	15,3
4	9 21	39,1	1	07	39			0,1	11	37	09,2	02	53,3	11	34	15,9	0	15	00,6	0	35	16,5	19,8	15,0
5	9 22	17,6	1	08	00,0			0,1	11	37	09,8	03	01,1	11	34	08,7	0	15	00,6	0	35	09,3	19,8	14,7
6	9 22	56,1	1	08	39,1			0,1	11	37	10,4	03	08,9	11	34	01,5	0	15	00,6	0	35	02,1	19,8	14,4
7	9 23	34,6	1	09	17,6			0,1	11	37	11,0	03	16,9	11	33	54,1	0	15	00,6	0	34	54,7	19,8	14,1
8	9 24	13,1	1	09	56,6			0,1	11	37	11,7	03	24,8	11	33	46,9	0	15	00,6	0	34	47,5	19,8	13,8
9	9 24	51,6	1	10	35,1			0,1	11	37	12,4	03	32,7	11	33	39,7	0	15	00,6	0	34	40,3	19,8	13,5
10	9 25	30,1	1	11	13,6			0,1	11	37	13,1	03	40,6	11	33	32,5	0	15	00,6	0	34	33,1	19,8	13,2
11	9 26	08,6	1	11	52,1			0,1	11	37	13,8	03	48,5	11	33	25,3	0	15	00,6	0	34	25,9	19,8	12,9
12	9 26	47,1	1	12	30,6			0,1	11	37	14,5	03	56,4	11	33	18,1	0	15	00,6	0	34	18,7	19,8	12,6
13	9 27	25,6	1	13	09,1			0,1	11	37	15,2	04	04,3	11	33	10,9	0	15	00,6	0	34	11,5	19,8	12,3
14	9 28	04,1	1	13	47,6			0,1	11	37	15,9	04	12,2	11	33	03,7	0	15	00,6	0	34	04,3	19,8	12,0
15	9 28	42,6	1	14	26,1			0,1	11	37	16,6	04	20,1	11	32	56,5	0	15	00,6	0	34	57,1	19,8	11,7
16	9 29	21,1	1	15	04,6			0,1	11	37	17,3	04	28,0	11	32	49,3	0	15	00,6	0	34	49,9	19,8	11,4
17	9 29	59,6	1	15	43,1			0,1	11	37	18,0	04	35,9	11	32	42,1	0	15	00,6	0	34	42,7	19,8	11,1
18	9 30	38,1	1	16	21,6			0,1	11	37	18,7	04	43,8	11	32	34,9	0	15	00,6	0	34	35,5	19,8	10,8
19	9 31	16,6	1	17	00,1			0,1	11	37	19,4	04	51,7	11	32	27,7	0	15	00,6	0	34	28,3	19,8	10,5
20	9 31	55,1	1	17	38,6			0,1	11	37	20,1	04	59,6	11	32	20,5	0	15	00,6	0	34	21,1	19,8	10,2
21	9 32	33,6	1	18	17,1			0,1	11	37	20,8	05	07,5	11	32	13,3	0	15	00,6	0	34	13,9	19,8	09,9
22	9 33	12,1	1	18	55,6			0,1	11	37	21,5	05	15,4	11	32	06,1	0	15	00,6	0	34	06,7	19,8	09,6
23	9 33	50,6	1	19	34,1			0,1	11	37	22,2	05	23,3	11	31	58,9	0	15	00,6	0	33	59,5	19,8	09,3
24	9 34	29,1	1	20	12,6			0,1	11	37	22,9	05	31,2	11	31	51,7	0	15	00,6	0	33	52,3	19,8	09,0
25	9 35	07,6	1	20	51,1			0,1	11	37	23,6	05	39,1	11	31	44,5	0	15	00,6	0	33	45,1	19,8	08,7

1825.	Transit Chronometer Employed.						Equation of equal Altitudes	Apparent Noon by Chronometer Employed.		Equation of Time.	Mean Noon by Chronometer Employed.			Chronometer Slow or Fast for Mean Time.				Rate for Day.	
Month.	Forenoon.			Afternoon.										24h Sidereal.			Complete Sidereal.			24h.	Correction
	h.	′	″	h.	′	″	″	h.	′	″	′	+	−	h.	′	″	h.	′	″	″	″
Feb. 16	9	13	07,6	2	02	30,8		11	39	03,2	09	55,4		11	29	18,8	0	18	08,6	0	30	40,2	− 13,4	+ 11,1
17	9	11	31,7	2	00	09,7		11	40	53,7	10	03,9		11	29	33,8	0	18	35,6	0	30	05,0	09,6	10
18	9	17	10,9	2	04	40,4		11	41	07,5	10	17,8		11	29	49,5	0	18	08,1	0	29	51,1	11,1	13,9
19	9	16	00	2	05	43,7		11	41	34,0	10	31,8		11	30	02,2	0	18	37,3	0	29	37,3	10,1	14,9
20	9	19	13,2	2	03	41,1		11	42	00,4	10	45,7		11	29	37,4	0	19	07,4	0	29	30,4	10,8	13,8
21	9	19	14,5	2	07	20,3		11	42	56,5	10	59,9		11	29	31,4	0	19	30,0	0	29	09,0	10,0	15,1
24	9	19	03,4	2	05	03		11	42	30,7	11	33,5		11	29	10,5	0	19	59,5	0	29	49,5	13,5	10,5
27	9	20	10,3	2	09	05,8		11	43	10,6	12	08,3		11	29	31,0	0	20	39,8	0	27	09,8	10,3	10,7
28	9	23	21,9	2	07	57,0		11	43	44,4	12	20,0		11	29	20,0	0	21	02,1	0	27	09,1	05,7	10,9
30	9	15	48,3	2	11	29		11	44	03,8	12	59,9		11	29	09,0	0	21	34,4	0	27	35,4	09,1	14,9
31	9	18	35,1	2	13	20,4		11	44	09,3	13	41,9		11	29	07,3	0	21	02,3	0	26	38,3	09,3	15,1
Feb. 1	9	23	14,0	2	19	50,6		11	44	07,1	13	59,7		11	29	01,3	0	21	02,5	0	25	50,5	11,5	17,5
3	9	25	03,7	2	11	09,3		11	43	56,5	14	05,9		11	28	43,7	0	21	20,3	0	23	49,3	09,3	18,7
5	9	19	20,6	2	19	50		11	43	35,3	14	17,9		11	28	35,1	0	21	11,9	0	23	09,9	11,9	21,3
7	9	24	57,5	2	09	06,1		11	43	02,6	14	00,9		11	28	29,0	0	21	33,0	0	24	01,0	04,0	20,1
8	9	19	00,4	2	03	41,6		11	42	21,0	13	39		11	28	18,5	0	22	49,5	0	24	01,5	10,4	15,6
9	9	16	17,6	2	05	00,5		11	41	40,0	13	19,4		11	28	15,6	0	22	51,3	0	23	46,3	11,1	15,9
10	9	18	10,3	2	04	00,7		11	41	05,5	12	54,1		11	28	11,4	0	22	09,3	0	23	09,3	09,1	14
11	9	18	04,6	2	01	50,9		11	41	07,3	12	28,9		11	28	11,3	0	22	17,3	0	23	14,3	11,9	11
12	9	17	04,3	2	03	09,6		11	41	37,4	12	03,8		11	28	10,5	0	22	07,3	0	23	00,3	09,0	12,7
13	9	17	41,6	2	05	15,2		11	41	08,3	11	37,2		11	27	31,1	0	22	37,1	0	23	47,9		

1827.	Times of the Clocks.			Equation of equal Altitudes	Apparent Noon by the Clock.	Equation of Time.	Mean Noon by the Clock.	Uncompensated Slow or Fast for Mean Time.			Rate per Day.		
Month.	Forenoon.	Afternoon.	Mean.					Clock Slow.	20½ Slow.	Equation Slow.	Clock.	20½.	Correction.
	h. ′ ″	h. ′ ″	h. ′ ″	″	h. ′ ″	″	h. ′ ″	h. ′ ″	h. ′ ″	h. ′ ″	″	″	″
Feb. 14	9 10 18	2 46 56,2	12 14 24,5	9,5	12 14 31,03	14 29,87	11 59 59,16	0 00 01,81	0 03 50,1	0 02 23,1			
15	9 10 27,5	2 20 23,5	12 11 21,5	9,0	12 14 29,15	14 30,66	11 59 58,49	0 00 01,51	"	0 02 22,0	− 00,07	"	+21,5
16	9 40 30,3	2 20 07,2	12 14 55	9,5	12 14 33,69	14 37,68	11 59 56,00	0 00 01,32	"	"	+ 00,21	"	
17	9 20 13,4	2 20 05,5	12 14 07,1	9,2	12 14 17,21	14 10,09	11 59 58,09	0 00 01,12	0 04 45,7	0 01 20,1	− 00,00	"	
18	9 40 20,1	2 47 03,7	12 14 11,8	9,4	12 14 19,00	14 14,20	11 59 57,64	0 00 01,36	0 04 57,4	0 01 19,4	00,04	−18,7	14,3
19	9 20 10,8	2 20 24,7	12 14 07,9	9,3	12 14 00,31	14 08,82	11 59 57,06	0 00 00,50	0 05 06,0	0 01 01,8	00,16	09,3	16,3
20	9 20 09,7	2 47 00,2	12 14 05	8,9	12 13 02,83	14 01,51	11 59 60,01	0 00 00,04	"	0 00 59			11,9
21	9 20 07,7	2 46 59,2	12 13 58	9,1	12 13 55,01	13 54,50	11 59 60,20	0 00 00,65	0 05 09,6	0 00 59,7	+ 00,23	10,8	19,5
22	9 20 09,7	2 20 29,5	12 13 49,2	9,1	12 13 47,10	13 46,70	11 59 60,46	0 00 00,54	0 05 08,5	0 00 58,5	− 00,09	09,8	18,4
23	9 20 01,5	2 47 07,5	12 14 04,5	9,1	12 13 57,08	13 59,17	11 59 59,12	0 00 00,88	0 05 09,5	0 00 58,5	01,38	10,8	18,5
24	9 20 01,5	2 47 05,5	12 14 03,5	9,1	12 13 57,01	13 59,16	11 59 58,35	0 00 01,65	0 05 09,6	0 00 57,9	00,73	11,2	17,8
25	10 27 13,3	1 47 43,5	12 14 28,4	8,9	12 13 56,84	13 59,09	11 59 57,44	0 00 02,56	0 05 09,56	0 00 57,4	00,75	11,8	19,2
26	9 20 20,3	2 20 38,3	12 14 29,3	8,9	12 13 57,16	13 59,69	11 59 59,60	0 00 01,31	0 05 08,9	0 00 57,6		11,9	18,1
27	9 20 20,6	2 20 38,4	12 14 29,5	8,9	12 13 57,36	13 59,89	11 59 59,60	0 00 01,31	0 05 08,9	0 00 57,6		11,9	18,1
Mar. 1	9 20 41,5	2 46 51,6	12 14 06,6	8,7	12 13 59,06	13 59,66	11 59 59,40	0 00 01,58	0 05 08,5	0 00 57,3	00,19	12,1	18,5
2	9 20 44,3	2 46 49,1	12 14 06,7	8,5	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4	+ 00,33	11,9	17,4
3	9 20 41,8	2 46 49,6	12 14 05,7	8,4	12 13 58,03	13 58,23	11 59 59,80	0 00 00,20	0 05 08,5	0 00 57,7	− 00,05	12,5	18,1
4	9 20 44,3	2 46 49,1	12 14 06,7	8,3	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
5	9 20 44,3	2 46 49,1	12 14 06,7	8,2	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
6	9 20 44,3	2 46 49,1	12 14 06,7	8,1	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
7	9 20 44,3	2 46 49,1	12 14 06,7	8,0	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
8	9 20 44,3	2 46 49,1	12 14 06,7	7,9	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
9	9 20 44,3	2 46 49,1	12 14 06,7	7,8	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
10	9 20 44,3	2 46 49,1	12 14 06,7	7,7	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
11	9 20 44,3	2 46 49,1	12 14 06,7	7,6	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
12	9 20 44,3	2 46 49,1	12 14 06,7	7,5	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
13	9 20 44,3	2 46 49,1	12 14 06,7	7,4	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
14	9 20 44,3	2 46 49,1	12 14 06,7	7,3	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
15	9 20 44,3	2 46 49,1	12 14 06,7	7,2	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
16	9 20 44,3	2 46 49,1	12 14 06,7	7,1	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
17	9 20 44,3	2 46 49,1	12 14 06,7	7,0	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
18	9 20 44,3	2 46 49,1	12 14 06,7	6,9	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
19	9 20 44,3	2 46 49,1	12 14 06,7	6,8	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
20	9 20 44,3	2 46 49,1	12 14 06,7	6,7	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
21	9 20 44,3	2 46 49,1	12 14 06,7	6,6	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
22	9 20 44,3	2 46 49,1	12 14 06,7	6,5	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
23	9 20 44,3	2 46 49,1	12 14 06,7	6,4	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
24	9 20 44,3	2 46 49,1	12 14 06,7	6,3	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
25	9 20 44,3	2 46 49,1	12 14 06,7	6,2	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
26	9 20 44,3	2 46 49,1	12 14 06,7	6,1	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
27	9 20 44,3	2 46 49,1	12 14 06,7	6,0	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
28	9 20 44,3	2 46 49,1	12 14 06,7	5,9	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
29	9 20 44,3	2 46 49,1	12 14 06,7	5,8	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
30	9 20 44,3	2 46 49,1	12 14 06,7	5,7	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
31	9 20 44,3	2 46 49,1	12 14 06,7	5,6	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
April 1	9 20 44,3	2 46 49,1	12 14 06,7	5,5	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
2	9 20 44,3	2 46 49,1	12 14 06,7	5,4	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
3	9 20 44,3	2 46 49,1	12 14 06,7	5,3	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
4	9 20 44,3	2 46 49,1	12 14 06,7	5,2	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
5	9 20 44,3	2 46 49,1	12 14 06,7	5,1	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
6	9 20 44,3	2 46 49,1	12 14 06,7	5,0	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
7	9 20 44,3	2 46 49,1	12 14 06,7	4,9	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
8	9 20 44,3	2 46 49,1	12 14 06,7	4,8	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
9	9 20 44,3	2 46 49,1	12 14 06,7	4,7	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			
10	9 20 44,3	2 46 49,1	12 14 06,7	4,6	12 13 59,03	13 59,03	11 59 59,96	0 00 00,04	0 05 08,5	0 00 57,4			

1823.	Times by the Clock.									Equation of equal Altitudes.	Apparent Noon by the Clock.			Equation of Time.		Mean Noon by the Clock.			Chronometers Slow or Fast for Mean Time.									Rate per Day.		
Month.	Forenoon.			Afternoon.			Mean.												Clock.			391 Slow.			Earnshaw Slow.			Clock.	391.	Earnshaw.
	h.	′	″	h.	′	″	h.	′	″	″	h.	′	″	′	″	h.	′	″	Slow. h.	′	″	h.	′	″	h.	′	″			″
Mar. 11	9	25	27,4	2	49	11,7	12	07	49,8	1,0	12	07	48,44	10	27,75	11	57	20,00	0	02	39,32	4	12	19,4	0	00	26,8			
12	9	28	01,9	2	47	02	12	07	33,5	0,8	12	07	32,60	10	11,80	11	57	20,88	0	02	39,41	4	12	28,1	0	00	42,7	+ 00,33	− 00,7	+ 15,3
13	9	23	40,5	2	50	53,9	12	07	17,2	0,7	12	07	16,55	09	55,51	11	57	21,64	0	02	38,80	4	12	43,9	0	01	00,1	00,15	15,8	17,0
14	9	23	18	2	50	43,9	12	07	00,9	0,6	12	07	00,35	09	38,97	11	57	21,38	0	02	38,62	4	12	55,6	0	01	17,4	00,34	11,7	17,3
16	9	51	07,8	2	21	44,7	12	06	26,2	0,4	12	06	25,8	09	05,09	11	57	10,78	0	02	39,22	4	13	18,9	0	04	01,3	− 00,30	11,3	22
17	9	23	51,2	2	47	42,3	12	05	46,8	0,4	12	05	46,39	08	47,69	11	56	58,60	0	02	01,38	4	13	28,8	0	02	23	=	10,4	23,7
18	9	54	30	2	16	23,3	12	05	28,1	0,4	12	05	27,7	08	30,14	11	56	57,86	0	03	02,58	4	13	41,8	0	02	40,6	01,10	12,4	13,6
19	9	19	09,6	2	51	09,6	12	05	00,1	0,3	12	05	08,79	08	12,39	11	56	56,84	0	03	03,30	4	13	55,2	0	02	58,8	01,12	13,0	18,2
20	9	18	48,8	2	50	23,7	12	04	50,7	0,3	12	04	50,41	07	54,37	11	56	56,06	0	03	03,98	4	14	00,8	0	03	20,5	00,28	11,5	22,7
				Earnshaw.							*Earnshaw.*					*Earnshaw.*														
21	9	33	10,6	2	49	18,4	12	11	14,2	0,3	12	11	13,92	07	50,91	12	03	37,71				4	14	23,5	0	03	37,71		13,5	17,2
22	9	33	08,9	2	49	15	12	11	11,8	0,3	12	11	11,5	07	17,9	12	03	53,00				4	14	35,4	0	03	53,6		15,1	15,9

OBSERVATIONS

For the Time, Longitude, and Rates of

Chronometers at Pulo Gaukeah Loot in 1823. (R.)

Month.	Mean of Times per Chronometer by Eureshaw.	Altitudes Corrected for Error of the Sextant.	Refraction.	Parallax.	True Altitude of the Sun's Centre.	Sun's Declination.	Apparent Time.	Equation of Time.	Mean Time.	Chronometer Slow or Fast for Mean Time. Eureshaw Slow.	Rate per Day. Eureshaw.	Rate per Day. No. 397.
1822	h. ′ ″	° ′ ″	″ −	″ +	° ′ ″	° ′ ″	h. ′ ″	′ ″	h. ′ ″	h. ′ ″	″	
Dec. 22	22 9 51,03	63 29 27,5	32,7	4	63 28 59	23 27 40,2	22 46 17,9	− 0 32,9	22 43 23,1	0 36 33,85		
23	22 39 57,22	43 59 41,67	59	6,5	43 58 49,17	23 26 48,10	21 16 47,86	0 34,73	21 18 23,15	0 36 25,93	+8,45	
24	19 36 13,83	34 29 41,65	80,5	7,55	34 28 56,71	23 26 3,47	23 29 24,15	+ 0 8,23	20 32 29,3	0 36 14,67	15,61	
25	23 34 7,83	42 29 37,5	62	6,75	42 28 49,03	23 24 29,5	21 9 24,23	0 34,87	21 10 9,1	0 36 1,2	13,05	
26	20 46 44	44 58 51,75	57	6,5	44 58 1,2	23 22 27,8	21 21 23,3	1 4,8	21 22 30,1	0 35 46,1	14,65	
28	1 50 7,9	47 58 57,5	55	6,9	47 58 52,7	23 19 45,8	2 23 50,8	1 40,8	2 25 37,5	0 35 30,03	12,95	
	20 29 48	40 58 57,5	60	6,9	40 58 50,4	23 13 39,7	21 2 9,5	2 32,55	21 4 42,03	0 34 54,03	20,25	
30	20 49 22,22	44 58 57,5	57	6,5	44 58 47	23 9 44,3	21 21 2,3	3 1,9	21 24 8,2	0 34 41,08	17,88	
31	20 38 1	49 29 32,5	62	6,35	49 28 62,23	23 5 23,5	21 8 40,25	3 30,4	21 12 29	0 34 28	14,09	
1823 Jan. 1	21 2 34,75	47 58 37,5	52	6,2	47 58 51,7	23 00 12,1	21 32 51,5	3 59,3	21 36 50,8	0 34 10,05	11,35	
2	20 55 45,75	45 57 37,5	55	6,4	45 58 48,9	22 55 17	21 25 21,7	4 27,4	21 29 49,1	0 34 3,35	12,77	
3	20 53 54,75	43 29 40	56	6,5	43 28 50,3	22 49 34	22 22 46,0	4 55,08	22 27 41,98	0 33 47,83	16,15	
4	23 56 27,67	41 57 33	63	6,8	41 40 56,1	22 43 29,1	21 4 30,4	5 22,1	21 9 50,5	0 33 29,83	17,57	
5	23 37 5,85	41 58 27,5	62	6,8	41 42 33,6	22 36 59,5	21 4 39,4	5 49,15	21 10 19,55	0 33 16,3	13,53	
6	23 30 6,5	41 30 13,15	54	6,08	41 32 58	22 14 18,6	21 1 36,2	7 7,47	21 8 43,67	0 32 37,17	13,03	
26	23 48 57	43 17 35	60,5	6,7	42 55 25,1	18 41 11,5	21 3 14,7	12 56,05	21 34 51,65	0 27 54,63		
27	21 9 6,6	47 40 55,5	52	6,3	47 23 18,2	18 25 35,5	13 23 30,6	13 9,27	21 36 39,87	0 27 33,97	21,10	
28	22 14 30,0	61 29 6,5	32,4	4	61 3 19,5	18 9 13	22 25 19,8	13 21	22 41 40,8	0 27 10,14	22,19	

1823 Month.	Time by Chronometer: Forenoon	Afternoon	Noon Nearly	Equation to equal Alt. Sun's Limbs.	Noon by Chronometer.	Equation of Time.	Apparent Noon.	Chronometers Slow on Fast for Mean Noon: Harwell Slow.	Earnshaw Slow.	No. 293 Slow.	Rate per Day: Harwell	Earnshaw.	No. 293.
Feb. 19	h. ' " 10 23 26	h. ' " 14 7 53,5	h. ' " 19 16 14,0	" -8,53	h. ' " 19 14 12,4	' " -14 18,28	h. ' " 11 58 59,72	h. ' " 1 0 1,95	h. ' " 3 21 17,85	h. ' " 3 38 50,55	"	"	"
20	10 17 44,5	14 10 10,5	18 18 9	7,83	14 14 5,57	14 8,47	11 58 57,57	1 0 2,13	3 21 1,98	3 38 7,45	— 0,78	+15,01	−10,51
March 1	10 18 0,25	14 9 7,15	18 18 0,05	1,92	14 13 6,42	13 49,50	11 59 15,84	1 1 40,14	3 19 37,95	3 37 47,16	0,77	21,13	11,79
3	10 18 1,25	14 9 37,4	18 18 44,3	1,83	14 13 42,65	13 32,65	11 59 25,27	1 1 39,81	3 17 43,01	3 37 9,01			

1823 Month.	Mean of Times by Harwell's Clocks.	Altitudes (Face) corrected for Error of Sextant.	Refraction.	Parallax.	Time. Altitude of the Sun's Centre.	Co-Declination.	Apparent Time.	Equation of Time.	Mean Time.	Chronometers Slow on Fast for Mean Time: Harwell Slow.	Earnshaw Fast.	No. 293 Slow.	Rate per Day: Harwell.	Earnshaw.	No. 293.
	h. ' "	° ' "	"	"	h. ' "	° ' "	h. ' "	' "	h. ' "	h. ' "	h. ' "	h. ' "	"	"	"
March 5	22 55 49,5	54 0 19,8	0	0	22 55 49,8	4 49 36,0	s. 29 17 41,4	+ 13 59,75	12 56 41,34	0 2 18,05	0 0 2,87	4 11 40,12			
6	22 59 41	53 58 19,5	0	0	22 59 41,3	4 58 19,5	29 11 59,89	13 41,34	12 57 4,09	0 2 13,00	0 0 10,26	4 10 3,87	14,89	−18,73	
10	23 04 37,5	53 47 19,0	0	0	23 04 37,5	5 8 47,5	29 12 7,92	13 27,89	12 57 20,03	0 2 7,95	0 0 10,59	4 10 18,86	14,69	12,81	
15	23 09 37,25	53 36 19,5	0	0	23 09 37,2	5 18 11,5	29 12 25,8	13 14,03	12 57 11,77	0 2 2,90	0 0 10,92	4 10 29,60	13,98	8,75	
20	23 14 37,25	53 25 19,5	0	0	23 14 37,2	5 27 37,8	29 12 43,4	12 59,75	12 57 3,65	0 1 57,85	0 0 11,19	4 10 40,80	13,24	10,62	
25	23 19 37,25	53 14 19,5	0	0	23 19 37,2	5 37 4,2	29 13 0,9	12 46,27	12 57 14,63	0 1 53,05	0 0 11,57	4 10 51,92	12,51	11,81	
30	23 24 37,25	53 3 19,5	0	0	23 24 37,2	5 46 30,7	29 13 18,5	12 32,51	12 57 26,99	0 1 48,25	0 0 11,95	4 11 3,87	11,78	12,87	
April 4	23 33 37,25	52 47 19,5	0	0	23 33 37,2	6 2 57,8	29 13 54,4	12 4,75	12 58 2,15	0 1 36,30	0 0 12,69	4 11 28,86	11,72	13,08	
9	23 38 37,25	52 36 19,5	0	0	23 38 37,2	6 11 24,3	29 14 13,1	11 48,04	12 58 25,19	0 1 24,26	0 0 13,07	4 11 41,93	11,77	13,03	
14	23 43 37,25	52 25 19,5	0	0	23 43 37,2	6 20 50,8	29 14 32,0	11 31,92	12 58 48,28	0 1 12,22	0 0 13,45	4 11 54,98	11,83	12,97	
19	23 48 37,25	52 14 19,5	0	0	23 48 37,2	6 30 17,3	29 14 50,9	11 15,80	12 59 12,10	0 1 0,18	0 0 13,83	4 12 8,81	11,96	12,84	
24	23 53 37,25	52 3 19,5	0	0	23 53 37,2	6 39 43,9	29 15 9,3	10 59,68	12 59 35,62	0 0 48,14	0 0 14,21	4 12 22,64	12,12	12,68	
29	23 58 37,25	51 52 19,5	0	0	23 58 37,2	6 49 10,5	29 15 27,7	10 44,56	12 59 59,14	0 0 36,06	0 0 14,59	4 12 36,45	12,30	12,50	
May 4	0 3 37,25	51 41 19,5	0	0	0 3 37,2	6 58 37,1	29 15 46,1	10 29,44	13 0 16,58	0 0 24,00	0 0 14,97	4 12 50,27	12,50	12,30	
9	0 8 37,25	51 30 19,5	0	0	0 8 37,2	7 8 3,8	29 16 4,6	10 14,32	13 0 33,92	0 0 11,94	0 0 15,35	4 13 3,62	12,71	12,09	
14	0 13 37,25	51 19 19,5	0	0	0 13 37,2	7 17 29,2	29 16 23,4	9 59,20	13 0 51,60	0 0 0,06	0 0 15,73	4 13 15,41	12,91	11,91	
19	0 18 37,25	51 8 19,5	0	0	0 18 37,2	7 26 54,6	29 16 42,6	9 44,08	13 1 9,68	0 0 11,88	0 0 16,11	4 13 27,99	13,09	11,71	
24	0 23 37,25	50 57 19,5	0	0	0 23 37,2	7 36 19,9	29 17 1,3	9 28,56	13 1 29,86	0 0 23,82	0 0 16,49	4 13 40,31	13,28	11,53	
29	0 28 37,25	50 46 19,5	0	0	0 28 37,2	7 45 45,3	29 17 20,1	9 13,04	13 1 50,90	0 0 35,76	0 0 16,87	4 13 52,63	13,47	11,35	
June 3	0 33 37,25	50 36 19,5	0	0	0 33 37,2	7 55 11,7	29 17 39,0	8 57,52	13 2 11,48	0 0 47,70	0 0 17,25	4 14 4,94	13,66	11,17	
8	0 38 37,25	50 25 19,5	0	0	0 38 37,2	8 4 38,1	29 17 58,1	8 43,04	13 2 32,14	0 0 59,64	0 0 17,63	4 14 17,25	13,85	11,00	
13	0 43 37,25	50 14 19,5	0	0	0 43 37,2	8 14 4,5	29 18 17,7	8 28,56	13 2 53,26	0 1 11,58	0 0 18,01	4 14 29,59	14,04	10,82	
18	0 48 37,25	50 3 19,5	0	0	0 48 37,2	8 23 30,9	29 18 37,3	8 14,08	13 3 14,38	0 1 23,52	0 0 18,39	4 14 41,91	14,23	10,64	
23	0 53 37,25	49 52 19,5	0	0	0 53 37,2	8 32 57,3	29 18 57,0	7 59,60	13 3 36,60	0 1 35,46	0 0 18,77	4 14 54,24	14,42	10,46	
28	0 58 37,25	49 41 19,5	0	0	0 58 37,2	8 42 24,1	29 19 16,9	7 45,12	13 3 58,02	0 1 47,40	0 0 19,15	4 15 6,57	14,61	10,28	
July 3	1 3 37,25	49 30 19,5	0	0	1 3 37,2	8 51 50,4	29 19 36,8	7 30,64	13 4 19,44	0 1 59,34	0 0 19,53	4 15 18,90	14,80	10,10	
8	1 8 37,25	49 19 19,5	0	0	1 8 37,2	9 1 16,7	29 19 56,5	7 15,68	13 4 40,82	0 2 11,28	0 0 19,91	4 15 31,23	14,99	9,92	
13	1 13 37,25	49 8 19,5	0	0	1 13 37,2	9 10 42,9	29 20 16,3	7 0,72	13 5 1,52	0 2 23,22	0 0 20,29	4 15 43,55	15,18	9,74	
18	1 18 37,25	48 57 19,5	0	0	1 18 37,2	9 20 9,1	29 20 36,3	6 46,76	13 5 23,06	0 2 35,16	0 0 20,67	4 15 55,87	15,37	9,56	
23	1 23 37,25	48 46 19,5	0	0	1 23 37,2	9 29 35,3	29 20 56,5	6 32,80	13 5 45,30	0 2 47,10	0 0 21,05	4 16 8,18	15,56	9,38	
28	1 28 37,25	48 35 19,5	0	0	1 28 37,2	9 39 1,5	29 21 16,7	6 18,84	13 6 7,86	0 2 58,98	0 0 21,43	4 16 20,41	15,75	9,19	
33	1 33 37,25	48 24 19,5	0	0	1 33 37,2	9 48 27,7	29 21 36,9	6 4,88	13 6 30,02	0 3 10,80	0 0 21,81	4 16 32,62	15,94	9,01	
38	1 38 37,25	48 13 19,5	0	0	1 38 37,2	9 57 54,1	29 21 57,1	5 50,92	13 6 52,02	0 3 22,62	0 0 22,19	4 16 44,81	16,13	8,82	
43	1 43 37,25	48 2 19,5	0	0	1 43 37,2	10 7 20,6	29 22 17,8	5 36,96	13 7 13,76	0 3 34,44	0 0 22,57	4 16 57,00	16,32	8,63	
48	1 48 37,25	47 51 19,5	0	0	1 48 37,2	10 16 46,7	29 22 37,9	5 22,92	13 7 35,42	0 3 46,26	0 0 22,95	4 17 9,19	16,51	8,44	
53	1 53 37,25	47 40 19,5	0	0	1 53 37,2	10 26 12,8	29 22 58,0	5 8,80	13 8 6,80	0 3 58,08	0 0 23,33	4 17 21,38	16,70	8,25	
58	1 58 37,25	47 29 19,5	0	0	1 58 37,2	10 35 38,8	29 23 18,0	4 54,56	13 8 38,24	0 4 9,90	0 0 23,71	4 17 33,57	16,89	8,06	
2 3	2 3 37,25	47 18 19,5	0	0	2 3 37,2	10 45 4,8	29 23 37,9	4 40,32	13 9 10,22	0 4 21,72	0 0 24,09	4 17 45,76	17,08	7,87	
8	2 8 37,25	47 7 19,5	0	0	2 8 37,2	10 54 30,8	29 23 58,0	4 26,08	13 9 42,16	0 4 33,54	0 0 24,47	4 17 57,95	17,27	7,68	
13	2 13 37,25	46 56 19,5	0	0	2 13 37,2	11 3 57,1	29 24 19,9	4 11,84	13 10 14,08	0 4 45,36	0 0 24,85	4 18 10,14	17,46	7,49	
18	2 18 37,25	46 45 19,5	0	0	2 18 37,2	11 13 23,3	29 24 41,9	3 57,60	13 10 45,50	0 4 57,18	0 0 25,23	4 18 22,33	17,65	7,30	
23	2 23 37,25	46 34 19,5	0	0	2 23 37,2	11 22 49,6	29 25 4,8	3 43,36	13 11 18,16	0 5 8,98	0 0 25,61	4 18 34,52	17,84	7,11	
28	2 28 37,25	46 23 19,5	0	0	2 28 37,2	11 32 16,1	29 25 28,0	3 29,12	13 11 51,12	0 5 20,70	0 0 25,99	4 18 46,71	18,03	6,92	
33	2 33 37,25	46 12 19,5	0	0	2 33 37,2	11 41 42,6	29 25 51,1	3 14,88	13 12 24,08	0 5 32,42	0 0 26,37	4 18 58,90	18,22	6,73	
38	2 38 37,25	46 1 19,5	0	0	2 38 37,2	11 51 9,1	29 26 14,3	3 0,64	13 12 57,04	0 5 44,14	0 0 26,75	4 19 11,08	18,41	6,54	
43	2 43 37,25	45 50 19,5	0	0	2 43 37,2	12 0 35,7	29 26 37,5	2 46,40	13 13 30,10	0 5 55,86	0 0 27,13	4 19 23,26	18,60	6,35	
48	2 48 37,25	45 39 19,5	0	0	2 48 37,2	12 10 2,3	29 27 0,9	2 32,16	13 14 3,06	0 6 7,58	0 0 27,51	4 19 35,44	18,79	6,16	
53	2 53 37,25	45 28 19,5	0	0	2 53 37,2	12 19 28,9	29 27 24,3	2 17,92	13 14 42,22	0 6 19,30	0 0 27,89	4 19 47,63	18,98	5,97	
58	2 58 37,25	45 17 19,5	0	0	2 58 37,2	12 28 55,5	29 27 47,7	2 3,68	13 15 21,38	0 6 30,94	0 0 28,27	4 19 59,84	19,17	5,78	
3 3	3 3 37,25	45 6 19,5	0	0	3 3 37,2	12 38 22,1	29 28 10,9	1 49,44	13 16 0,34	0 6 42,52	0 0 28,65	4 20 12,06	19,36	5,59	
8	3 8 37,25	44 55 19,5	0	0	3 8 37,2	12 47 48,7	29 28 34,1	1 35,20	13 16 39,30	0 6 54,10	0 0 29,03	4 20 24,28	19,55	5,40	
13	3 13 37,25	44 44 19,5	0	0	3 13 37,2	12 57 15,3	29 28 57,9	1 20,96	13 17 18,26	0 7 5,68	0 0 29,41	4 20 36,50	19,74	5,21	
18	3 18 37,25	44 33 19,5	0	0	3 18 37,2	13 6 41,9	29 29 21,7	1 6,72	13 17 57,22	0 7 17,26	0 0 29,79	4 20 48,72	19,93	5,02	
23	3 23 37,25	44 22 19,5	0	0	3 23 37,2	13 16 8,5	29 29 45,7	0 52,48	13 18 36,18	0 7 28,82	0 0 30,17	4 21 0,94	20,12	4,83	
28	3 28 37,25	44 11 19,5	0	0	3 28 37,2	13 25 35,1	29 30 9,7	0 38,24	13 19 14,94	0 7 40,38	0 0 30,55	4 21 13,16	20,31	4,64	
33	3 33 37,25	44 0 19,5	0	0	3 33 37,2	13 35 1,7	29 30 33,9	0 24,00	13 19 53,90	0 7 52,00	0 0 30,93	4 21 25,38	20,50	4,45	
38	3 38 37,25	43 49 19,5	0	0	3 38 37,2	13 44 28,3	29 30 58,1	0 9,76	13 20 32,86	0 8 3,70	0 0 31,31	4 21 37,60	20,69	4,26	
43	3 43 37,25	43 38 19,5	0	0	3 43 37,2	13 53 55,6	29 31 22,4	0 4,48	13 21 11,82	0 8 15,42	0 0 31,69	4 21 49,82	20,88	4,07	
48	3 48 37,25	43 27 19,5	0	0	3 48 37,2	14 3 23,1	29 31 46,7	0 18,80	13 21 50,78	0 8 27,14	0 0 32,07	4 22 2,04	21,07	3,88	
53	3 53 37,25	43 16 19,5	0	0	3 53 37,2	14 12 50,8	29 32 11,0	0 33,12	13 22 29,74	0 8 38,86	0 0 32,45	4 22 14,26	21,26	3,69	
58	3 58 37,25	43 5 19,5	0	0	3 58 37,2	14 22 18,4	29 32 35,4	0 47,44	13 23 8,70	0 8 50,58	0 0 32,83	4 22 26,48	21,45	3,50	
4 3	4 3 37,25	42 54 19,5	0	0	4 3 37,2	14 31 46,1	29 32 59,6	1 1,76	13 23 47,66	0 9 2,30	0 0 33,21	4 22 38,70	21,64	3,31	
8	4 8 37,25	42 43 19,5	0	0	4 8 37,2	14 41 13,8	29 33 23,4	1 16,08	13 24 26,58	0 9 13,74	0 0 33,59	4 22 50,92	21,83	3,12	
13	4 13 37,25	42 32 19,5	0	0	4 13 37,2	14 50 41,4	29 33 47,8	1 30,40	13 25 5,46	0 9 25,18	0 0 33,97	4 23 3,14	22,02	2,93	
18	4 18 37,25	42 21 19,5	0	0	4 18 37,2	15 0 9,0	29 34 12,2	1 44,72	13 25 44,34	0 9 36,62	0 0 34,35	4 23 15,36	22,21	2,74	
23	4 23 37,25	42 10 19,5	0	0	4 23 37,2	15 9 36,6	29 34 36,6	1 59,04	13 26 23,22	0 9 48,06	0 0 34,73	4 23 27,58	22,40	2,55	
28	4 28 37,25	41 59 19,5	0	0	4 28 37,2	15 19 4,2	29 35 1,0	2 13,36	13 27 2,00	0 10 0,50	0 0 35,11	4 23 39,80	22,59	2,36	
33	4 33 37,25	41 48 19,5	0	0	4 33 37,2	15 28 32,1	29 35 25,3	2 27,68	13 27 40,78	0 10 12,94	0 0 35,49	4 23 52,02	22,78	2,17	
38	4 38 37,25	41 37 19,5	0	0	4 38 37,2	15 38 0,0	29 35 49,6	2 42,00	13 28 19,60	0 10 25,38	0 0 35,87	4 24 4,24	22,97	1,98	
43	4 43 37,25	41 26 19,5	0	0	4 43 37,2	15 47 27,8	29 36 15,0	2 56,32	13 28 58,68	0 10 37,82	0 0 36,25	4 24 16,46	23,16	1,79	
48	4 48 37,25	41 15 19,5	0	0	4 48 37,2	15 56 55,5	29 36 32,7	3 10,64	13 29 37,96	0 10 50,26	0 0 36,63	4 24 28,68	23,35	1,60	
53	4 53 37,25	41 4 19,5	0	0	4 53 37,2	16 6 23,3	29 36 50,5	3 24,96	13 30 17,18	0 11 2,70	0 0 37,01	4 24 40,90	23,54	1,41	
58	4 58 37,25	40 53 19,5	0	0	4 58 37,2	16 15 51,1	29 37 8,3	3 39,28	13 30 47,58	0 11 15,14	0 0 37,39	4 24 53,12	23,73	1,22	
5 3	5 3 37,25	40 42 19,5	0	0	5 3 37,2	16 25 18,9	29 37 26,1	3 53,60	13 31 19,50	0 11 27,58	0 0 37,77	4 25 5,34	23,92	1,03	
8	5 8 37,25	40 31 19,5	0	0	5 8 37,2	16 34 46,7	29 37 43,9	4 7,92	13 31 51,82	0 11 40,02	0 0 38,15	4 25 17,56	24,11	0,84	
13	5 13 37,25	40 20 19,5	0	0	5 13 37,2	16 44 14,5	29 38 1,7	4 22,24	13 32 24,14	0 11 52,46	0 0 38,53	4 25 29,78	24,30	0,65	
18	5 18 37,25	40 9 19,5	0	0	5 18 37,2	16 53 42,2	29 38 19,4	4 36,56	13 32 56,76	0 12 4,90	0 0 38,91	4 25 42,00	24,49	0,46	
23	5 23 37,25	39 58 19,5	0	0	5 23 37,2	17 3 9,9	29 38 37,1	4 50,88	13 33 29,38	0 12 17,34	0 0 39,29	4 25 54,22	24,68	0,27	
28	5 28 37,25	39 47 19,5	0	0	5 28 37,2	17 12 37,6	29 38 54,8	5 5,20	13 34 2,00	0 12 29,78	0 0 39,67	4 26 6,44	24,87	0,08	
33	5 33 37,25	39 36 19,5	0	0	5 33 37,2	17 22 5,3	29 39 12,5	5 19,52	13 34 34,62	0 12 42,22	0 0 40,05	4 26 18,66	25,06	−0,11	
38	5 38 37,25	39 25 19,5	0	0	5 38 37,2	17 31 33,0	29 39 30,2	5 33,84	13 35 7,24	0 12 54,66	0 0 40,43	4 26 30,88	25,25	−0,30	
43	5 43 37,25	39 14 19,5	0	0	5 43 37,2	17 41 0,8	29 39 48,0	5 48,16	13 35 39,86	0 13 7,10	0 0 40,81	4 26 43,10	25,44	−0,49	
48	5 48 37,25	39 3 19,5	0	0	5 48 37,2	17 50 28,6	29 40 5,8	6 2,48	13 36 12,48	0 13 19,54	0 0 41,19	4 26 55,32	25,63	−0,68	
53	5 53 37,25	38 52 19,5	0	0	5 53 37,2	17 59 56,4	29 40 23,6	6 16,80	13 36 45,10	0 13 31,98	0 0 41,57	4 27 7,54	25,82	−0,87	
58	5 58 37,25	38 41 19,5	0	0	5 58 37,2	18 9 24,2	29 40 41,4	6 31,12	13 37 17,72	0 13 44,42	0 0 41,95	4 27 19,76	26,01	−1,06	
6 3	6 3 37,25	38 30 19,5	0	0	6 3 37,2	18 18 52,0	29 40 59,2	6 45,44	13 37 50,34	0 13 56,86	0 0 42,33	4 27 31,98	26,20	−1,25	
8	6 8 37,25	38 19 19,5	0	0	6 8 37,2	18 28 19,8	29 40 57,0	6 59,76	13 38 23,26	0 14 9,30	0 0 42,71	4 27 44,20	26,39	−1,44	
13	6 13 37,25	38 8 19,5	0	0	6 13 37,2	18 37 47,5	29 41 14,7	7 14,08	13 38 56,78	0 14 21,74	0 0 43,09	4 27 56,42	26,58	−1,63	
18	6 18 37,25	37 57 19,5	0	0	6 18 37,2	18 47 15,3	29 41 32,1	7 28,40	13 39 30,50	0 14 34,18	0 0 43,47	4 28 8,64	26,77	−1,82	
23	6 23 37,25	37 46 19,5	0	0	6 23 37,2	18 56 43,1	29 41 49,5	7 42,72	13 40 4,22	0 14 46,62	0 0 43,85	4 28 20,86	26,96	−2,01	
28	6 28 37,25	37 35 19,5	0	0	6 28 37,2	19 6 11,0	29 42 6,8	7 57,04	13 40 37,84	0 14 59,06	0 0 44,23	4 28 33,08	27,15	−2,20	
33	6 33 37,25	37 24 19,5	0	0	6 33 37,2	19 15 38,8	29 42 24,0	8 11,36	13 41 11,46	0 15 11,50	0 0 44,61	4 28 45,30	27,34	−2,39	
38	6 38 37,25	37 13 19,5	0	0	6 38 37,2	19 25 6,6	29 42 41,4	8 25,68	13 41 45,08	0 15 23,94	0 0 44,99	4 28 57,52	27,53	−2,58	
43	6 43 37,25	37 2 19,5	0	0	6 43 37,2	19 34 34,4	29 42 58,8	8 40,00	13 42 18,80	0 15 36,38	0 0 45,37	4 29 9,74	27,72	−2,77	
48	6 48 37,25	36 51 19,5	0	0	6 48 37,2	19 44 2,2	29 43 16,2	8 54,32	13 42 52,52	0 15 48,82	0 0 45,75	4 29 21,96	27,91	−2,96	
53	6 53 37,25	36 40 19,5	0	0	6 53 37,2	19 53 30,0	29 43 33,8	9 8,64	13 43 26,24	0 16 1,26	0 0 46,13	4 29 34,18	28,10	−3,15	
58	6 58 37,25	36 29 19,5	0	0	6 58 37,2	20 2 57,8	29 43 51,4	9 22,96	13 43 59,96	0 16 13,70	0 0 46,51	4 29 46,40	28,29	−3,34	
7 3	7 3 37,25	36 18 19,5	0	0	7 3 37,2	20 12 25,6	29 44 8,8	9 37,28	13 44 33,52	0 16 26,14	0 0 46,89	4 29 58,62	28,48	−3,53	
8	7 8 37,25	36 7 19,5	0	0	7 8 37,2	20 21 53,4	29 44 26,4	9 51,60	13 45 7,08	0 16 38,58	0 0 47,27	4 30 10,84	28,67	−3,72	
13	7 13 37,25	35 56 19,5	0	0	7 13 37,2	20 31 21,2	29 44 44,0	10 5,92	13 45 40,64	0 16 51,02	0 0 47,65	4 30 23,06	28,86	−3,91	
18	7 18 37,25	35 45 19,5	0	0	7 18 37,2	20 40 49,0	29 45 1,6	10 20,24	13 46 13,84	0 17 3,46	0 0 48,03	4 30 35,28	29,05	−4,10	
23	7 23 37,25	35 34 19,5	0	0	7 23 37,2	20 50 16,8	29 45 19,2	10 34,56	13 46 47,04	0 17 15,90	0 0 48,41	4 30 47,50	29,24	−4,29	
28	7 28 37,25	35 23 19,5	0	0	7 28 37,2	20 59 44,6	29 45 36,8	10 48,88	13 47 19,68	0 17 28,34	0 0 48,79	4 30 59,72	29,43	−4,48	
33	7 33 37,25	35 12 19,5	0	0	7 33 37,2	21 9 12,4	29 45 54,8	11 3,20	13 47 52,00	0 17 40,78	0 0 49,17	4 31 11,94	29,62	−4,67	
38	7 38 37,25	35 1 19,5	0	0	7 38 37,2	21 18 40,2	29 46 13,0	11 17,52	13 48 24,32	0 17 53,22	0 0 49,55	4 31 24,16	29,81	−4,86	
43	7 43 37,25	34 50 19,5	0	0	7 43 37,2	21 28 8,0	29 46 31,2	11 31,84	13 48 56,64	0 18 5,66	0 0 49,93	4 31 36,38	30,00	−5,05	
48	7 48 37,25	34 39 19,5	0	0	7 48 37,2	21 37 35,8	29 46 49,4	11 46,16	13 49 28,96	0 18 18,10	0 0 50,31	4 31 48,60	30,19	−5,24	
53	7 53 37,25	34 28 19,5	0	0	7 53 37,2	21 47 3,6	29 47 7,6	12 0,48	13 49 59,28	0 18 30,54	0 0 50,69	4 32 0,82	30,38	−5,43	
58	7 58 37,25	34 17 19,5	0	0	7 58 37,2	21 56 31,4	29 47 25,8	12 14,80	13 50 29,60	0 18 42,98	0 0 51,07	4 32 13,04	30,57	−5,62	
8 3	8 3 37,25	34 6 19,5	0	0	8 3 37,2	22 5 59,2	29 47 44,0	12 29,12	13 50 59,92	0 18 55,42	0 0 51,45	4 32 25,26	30,76	−5,81	
8	8 8 37,25	33 55 19,5	0	0	8 8 37,2	22 15 26,8	29 48 2,2	12 43,44	13 51 30,24	0 19 7,86	0 0 51,83	4 32 37,48	30,95	−6,00	
13	8 13 37,25	33 44 19,5	0	0	8 13 37,2	22 24 54,4	29 48 20,4	12 57,76	13 52 0,56	0 19 20,30	0 0 52,21	4 32 49,70	31,14	−6,19	
18	8 18 37,25	33 33 19,5	0	0	8 18 37,2	22 34 22,0	29 48 38,6	13 12,08	13 52 30,88	0 19 32,74	0 0 52,59	4 33 1,92	31,33	−6,38	
23	8 23 37,25	33 22 19,5	0	0	8 23 37,2	22 43 49,6	29 48 56,8	13 26,40	13 53 1,20	0 19 45,18	0 0 52,97	4 33 14,14	31,52	−6,57	
28	8 28 37,25	33 11 19,5	0	0	8 28 37,2	22 53 17,2	29 49 15,0	13 40,72	13 53 31,52	0 19 57,62	0 0 53,35	4 33 26,36	31,71	−6,76	
33	8 33 37,25	33 0 19,5	0	0	8 33 37,2	23 2 44,8	29 49 33,2	13 55,04	13 54 1,84	0 20 10,06	0 0 53,73	4 33 38,58	31,90	−6,95	
38	8 38 37,25	32 49 19,5	0	0	8 38 37,2	23 12 12,4	29 49 51,4	14 9,36	13 54 32,16	0 20 22,50	0 0 54,11	4 33 50,80	32,09	−7,14	
43	8 43 37,25	32 38 19,5	0	0	8 43 37,2	23 21 40,0	29 50 9,6	14 23,68	13 55 3,28	0 20 34,94	0 0 54,49	4 34 3,02	32,28	−7,33	
48	8 48 37,25	32 27 19,5	0	0	8 48 37,2	23 31 7,6	29 50 27,8	14 38,00	13 55 34,40	0 20 47,38	0 0 54,87	4 34 15,24	32,47	−7,52	
53	8 53 37,25	32 16 19,5	0	0	8 53 37,2	23 40 35,2	29 50 46,0	14 52,32	13 56 5,52	0 20 59,82	0

At PULO GAUNSHI LOUT.

Results of the Observations

For the True Rhumbs of Moon Opals and the Variation of the Compass. (L.)

Month.	Apparent Time.	Hour Angle.	Distance Sun's N. Limb and Moon Opals corrected for Errors and Semi-Diameter.	Azimuth.	Horizontal Arc.	True Bearing.	Magnetic Bearing.	Variation of the Compass.
	h. ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
Dec. 04	8 05 01	59 44 20	50 01 13	60 33 44	55 38 41	87 37 35	86 35 00	1 28 35 E.
Jan. 10	8 18 07	62 29 13	54 38 55	67 51 17	59 37 14	87 20 09	86 15 00	1 35 09
20	8 04 13	59 41 43	49 49 13	77 04 45	59 59 15	87 05 17	86 13 00	1 01 17
					Mean . .	87 09 07 E. E.		1 13 07 E

For the Variation of the Compass,

By the Sun's Amplitude. (B.)

1872 / Month.	Time.	Sun's Declination.	True Amplitude.	Magnetic Bearing.	Variation.
	h. ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
December 29	6 0 0	22 25 43,6 S.	E. 66 23 36 N.	E. 64 31 17,7 N.	1 52 53,2 E.
30	6 0 4	23 23 21,4	66 25 05,5	65 1 17,7	1 24 19,5
31	6 1 05	22 21 40,5	66 27 47,6	65 27 47,8	1 27 47,4
1873	6 5	23 18 19,3	66 07 9,3	65 5	1 48 9,3
31	6 5 35	23 5 16,1	66 31 11,9	64 45	1 46 11,9
January 1	6 5	23 2 44,7	66 33 43,4	63 05	1 28 43,4
2	6 5	22 55 40,3	67 0 47,08	61 33	1 27 47,08
3	6 7	22 53 21,5	67 0 38,6	65 13	1 51 59
				Mean . .	1 48 43,34

By the Sun's Azimuth.

1872 / Month.	Time.	Sun's Altitude corrected for Error of Sextant.	Refraction.	Parallax.	True Altitude of the Sun's Centre.	Sun's Declination.	True Azimuth.	Magnetic Bearing.	Variation.
	h. ′	° ′ ″	′ ″	″	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
Jan. 2	5 59	5 16 50	28 34,5	8	5 45 58,5	22 55 21,5 S.	E. 67 0 38,6 N.	E. 65 13 N.	1 51 38,6 E.
3	5 53	10 19 05	5 8	8	10 33 10,7	22 53 40,3	66 47 56,3	65 15	1 32 56,3
5	5 40	5 44 40,5	8 24,5	8	5 46 54,5	22 51 13	67 10 19	65 15	1 55 19
							Mean . .		1 60 00,91

By the True Bearing of the Sun. (R.)

Month.	Time.	Sun's True Distance.	Sun's Declination.	True Altitude of the Sun.	Horizontal Arc.	True Azimuth.	True Bearing	Magnetic Bearing.	Variation.
	h.	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′	° ′ ″
Jan. 8	18 7 42,5	54 26 58,1	22 8 30,5 s	1 48 45,5	48 24 41,5	s. 62 19 30 e.	s 37 32 45,5 e	s. 55 45 e.	1 47 45,5e
20	18 9 33,4	50 38 46,7	20 7 45	50 50 37,5	50 31 57	63 52 15,0	37 25 37	55 45	1 50 23
								Mean ..	1 48 34,75

VARIATION BY THE COMPASS.

	°	′	″	
By the Sun's Amplitude ...	1	49	45,25	e.
Azimuth ...	1	48	56,5	
True Bearing ..	1	49	34,75	
Medium ..	1	48	s.	*(R.)*

Places on the West Coast of Sumatra and the Islands in the vicinity of Natual.

POLE PANJANG *from* POLE GADDAH LIGHT, 17°30'0 *feet* (L.)

Triangles.	Angles.			Distances from the intersected objects to	Feet.	Miles.
	°	′	″			
Pole Panjang	110	38	37	Mount Ophir	201974	38,184
Pole Gaddah Light	10	19	35		439903	83,344
Mount Ophir	10	54	49			

POLE GADDAH LIGHT *from* MOUNT OPHIR 439903.

Pole Gaddah Light	145	47	31	Pole Pisang	39163	6,591
Mount Ophir	9	17	29		439403	87,518
Pole Pisang	29	34	50			

POLE PISANG *from* POLE GADDAH LIGHT, 39163 *feet.*

Pole Pisang	47	39	30	Pole Ombar	13473	2,82
Pole Gaddah Light	97	53	31		82500	4,407
Pole Ombar	115	13	59			
Pole Pisang	11	49	42	Pole Gaddah	39163	3,591
Pole Gaddah Light	39	02	8		9809	1,807
Pole Gaddah	109	49	10			
Pole Pisang	79	05	40	Nedjang Hill	139019	25,146
Pole Gaddah Light	59	25	9		134089	25,262
Nedjang Hill	12	29	99			

* This Base, from Pole Panjang to Pole Gaddah Light, is obtained by the difference of Latitude and difference of Longitude, and reduced into feet, by using the degree on the Meridian (Table 60110) and the degree on the Perpendicular (Table 60107) to the Equator, with the Bearing of Pole Panjang from Pole Gaddah Light.

Pulo Penang from Pulo Gaddang Light, 2715 *feet.*

Triangles.	Angles.	Distances from the intermediate objects to	Feet.	Miles.
Pulo Penang	63 18 18	Oujong Tuna Hill ...	251101	47.549
Pulo Gaddang Light	101 41 0		110079	21.019
Oujong Tuna Hill	14 59 42			
Pulo Penang	58 18 0	Lobooroo Laddas Hill ..	197060	38.357
Pulo Gaddang Light	107 12 0		114339	21.654
Lobooroo Laddas Hill ...	18 50 0			
Pulo Penang	38 42 38	Tooloobemmah Hill ...	144134	27.289
Pulo Gaddang Light ...	118 58 0		139109	26.353
Tooloobemmah Hill ...	11 34 30			
Pulo Penang	49 29 53	Pangalaroo Hill	155661	29.479
Pulo Gaddang Light ...	190 59 90		189005	35.791
Pangalaroo Hill	9 30 67			
Pulo Penang	41 52 40	Kadagoo Hill	131078	24.816
Pulo Gaddang Light ...	132 30 20		180981	25.809
Kadagoo Hill	6 37 55			
Pulo Penang	58 28 20	Peak N. E. of Ayer Bangky	224383	42.373
Pulo Gaddang Light	118 39 0		210650	39.890
Peak N. E. of Ayer Bangky	4 57 55			

The Latitude and Longitude of some of the Places on the West Coast of Sumatra, and the Islands in the vicinity of Nassau, deduced from the Station of Pulo Gaddang Light in Latitude 5° 31′ 49″ N. and Longitude [illegible] *E.*

Stations at.	Names of Places.	Bearings reduced to the Meridian.	Distances direct.	Distances on the Meridian	Distances on the Perpendicular.	Latitude.	Longitude from Pulo Gaddang Light	Longitude from Greenwich.
		° ′ ″	feet.	feet.	feet.	° ′ ″	° ′ ″	° ′ ″
Pulo Gaddang Light.	Pulo Penang	67 27 30 S. W.	206163	82763	189168 W.	0 04 43 N.	0 03 30 W.	98 47 17 E.
	Pulo Dulor	30 31 00	82559	42510	71056	0 05 31	0 05 38	98 45 09
	Pulo Gaddang	1 26 00 N. E.	6009	6007	163 E.	0 09 55	0 0 02 E.	98 50 09
	Nolling Hill	39 47 00	134090	120553	76508	0 20 37	0 21 56	99 02 03
	Oujong Tuna	44 00 30	140979	78809	77289	0 14 50	0 22 48	99 03 49
	Lobooroo Laddas ...	49 36 00	114334	74109	87085	0 14 05	0 14 26	99 04 25
	Tooloobemmah	37 44 30	139109	85208	109343	0 13 57	0 17 48	99 07 53
	Pangalaroo	63 22 00	189005	66330	176519	0 13 47	0 21 44	99 11 51
	Kadagoo Hill	74 58 00	180981	50815	173908	0 10 0	0 25 39	99 09 06
	Mount Ophir ...	87 00 00	830933	19109	829941	0 01 10	1 29 38	100 53 10
	Pk. N. E. of Ayr Bangky	56 28 30	210650	116800	171839	0 10 17	0 44 40	99 34 47

* *For the Elevation of the Longitude of Pulo Gaddang Light—Vide page*

Latitude of Hurstmonceux.

By the Stars (&c.)

1815 Month.	Stars Observed.	Meridian Altitude.	Correction for Refraction.	Mean Declination.	Variation.	Correction for Variation.	True Meridian Altitude.	Zenith Distance.	True Declination.	Latitude North.
		° ′ ″	″	° ′ ″	″	″	° ′ ″		° ′ ″	° ′ ″
April 25	α Ursæ Min.	31 38 0	1 37,1	87 55 51,3	4,86	13,17	31 39 20,9	58 19 37,1	88 07 28,0	51 47 49,0
26	α Ursæ Min.	31 37 15	1 37,1	87 55 56,4	4,3	13,2	31 40 47,0	58 19 13,0	88 07 32,9	51 47 45,1
27	α Ursæ Min.	31 37 24,5	1 37,1	87 55 52,1	4,3	13,2	31 40 55,6	58 19 04,4	88 07 32,1	51 47 48,5
29	ι Ursæ Maj.	65 23 45	1 25,5	57 10 54,1	0,3	11,2	65 36 49,1	24 23 10,9	57 03 07,8	51 47 58,0
	ν Ursæ Maj.	51 53 55	1 37,1	64 41 55,1	0,2	8,2	51 53 37,8	38 06 22,2	64 41 48,0	51 47 51,8
	α Ursæ	52 48 59,3	1 37,1	88 50 55,3	4,3	13,0	52 49 53,4	37 10 06,6	88 37 55,9	51 47 49,5
	δ Cassiop.	28 07 43	1 10,2	59 42 09,9	4,3	13,0	28 07 39,7	61 52 20,3	59 29 17,0	51 47 49,3
	ε Cassiop.	38 19 59,5	1 10,2	63 20 31,0	4,3	13,0	38 12 04,7	51 48 08	63 07 48,1	51 47 13,8
	Arcturus	69 09 43	0 40,0	*			69 08 19,4	20 51 43,6	19 59 26,0	51 47 19
	α Cassiop.	58 59 45,3	0 56,0	56 29 08,1	4,4	13,2	58 50 15,3	31 07 44,7	57 15 55,5	51 47 59,8
May 2	ι Ursæ Maj.	59 53 45	1 50,0	57 29 03	0,3	10,0	59 39 55,1	30 07 34,9	57 03 10,0	51 47 49
	ν Ursæ Maj.	51 53 47,5	1 37,1	64 41 55,1	0,2	8	51 53 19,5	38 06 40,5	64 41 18,0	51 47 59,8
	α Ursæ	71 41 07,5	1 37,1	88 50 55,0	4,3	14,0	71 40 28,4	18 19 31,6	88 37 18,9	51 47 49,8
	β Ursæ	75 01 09	1 10,2	89 19 58,3	4,3	14,0	75 00 03,7	14 59 56,3	89 42 13,8	51 47 49,1
	β Cassiop.	56 17 59	1 10,2	59 29 43,0	4,3	13,0	56 10 51,3	33 49 08,7	59 16 09,0	51 47 59,8
	α Cassiop.	59 48 43	1 10,2	63 20 29,2	4,4	13,1	59 41 23,6	30 18 36,4	63 07 17,9	51 47 17,8
3	α Ursæ	71 41 55,3	1 37,1	88 50 55,1	4,3	13,0	71 40 28,4	18 19 31,6	88 37 18,9	51 47 49,7
	β Ursæ	75 01 59,3	1 10,2	89 19 57,7	4,3	14,0	75 00 10,9	14 59 49,0	89 42 10,8	51 47 59,8
25	α Ursæ	71 41 56,3	1 37,1	88 50 56,0	4,3	13,0	71 40 30,4	18 19 29,6	88 37 19,1	51 47 47,5
28	α Ursæ	71 41 54	1 37,1	88 50 56,9	4,4	13,2	71 40 10,9	18 19 47,1	88 37 19,0	51 47 53,5
	β Ursæ	75 01 58,5	1 10,2	89 19 03,4	4,3	14,0	75 00 15,9	14 59 44,1	89 42 09	51 47 57,2
	β Cassiop.	56 18 11,5	1 10,2	59 29 09,7	4,4	13,1	56 10 08	33 49 52	59 16 09,8	51 47 46,5
	Arcturus	69 09 38	0 55,0	*			69 08 10,4	20 51 49,6	19 59 33,5	51 47 54,2
	α Cassiop.	58 59 54	0 56,0	56 29 11,0	4,4	13,2	58 50 41,4	31 07 18,6	57 15 55	51 47 58,9
	Arcturus	69 08 58,5	0 55,0	*			69 08 03,5	20 51 56,5	19 59 26,9	51 47 58
27	α Ursæ	71 41 56,5	1 37,1	88 50 56,8	4,3	13,0	71 40 30,4	18 19 29,6	88 37 19,1	51 47 49,5
28	α Ursæ	71 41 54,5	1 37,1	88 50 57,3	4,3	13,2	71 40 10,8	18 19 49,2	88 37 19,0	51 47 49,8
29	α Ursæ	71 41 54	1 37,1	88 50 57,8	4,3	13,2	71 40 10,9	18 19 49,1	88 37 19,0	51 47 49,8
	γ Ursæ	57 41 01,5	1 10,2	71 09 49,5	4,4	13,2	57 40 11,9	32 19 48,1	71 07 19,0	51 47 48,5
	β Ursæ	75 01 06	1 10,2	89 19 43,0	4,3	14,0	75 00 07,7	14 59 52,3	89 42 09	51 47 49,7
	ν Ursæ Maj.	59 53 15,5	1 37,1	64 41 55,1	0,2	8,2	59 39 55,9	30 07 34,1	64 41 18,0	51 47 59,8
	ι Cassiop.	54 18 57,5	1 10,2	59 29 23	4,3	13,0	54 10 23	35 49 37	59 16 23,0	51 47 47,5
	Arcturus	69 09 42,5	0 55,0	*			69 08 08,9	20 51 51,1	19 59 30,4	51 47 59,5
July 6	ν Ursæ Maj.	59 53 58	1 37,1	64 41 51,1	0,3	13,0	59 39 54,4	30 20 35,6	64 41 18,0	51 47 59,4
	ι Cassiop.	54 18 53,5	1 10,2	59 29 23,7	0,3	13,0	54 17 07	35 42 53	59 29 23,0	51 48 01
	Arcturus	69 09 09	0 55,0	*			69 08 13,4	20 51 45,6	19 59 30,4	51 47 14,8
	α Cassiop.	58 59 58,5	0 56,0	56 29 10,7	4,3	13,4	58 50 46,3	31 07 13,7	57 15 00,7	51 48 01
	Arcturus	69 09 02	0 55,0	*			69 08 06,3	20 51 53,7	19 59 30,4	51 47 15
7	ν Ursæ Maj.	59 53 55,5	1 37,1	64 41 55,1	0,3	13,0	59 39 55,8	30 20 34,2	64 41 18,0	51 47 59
	ι Cassiop.	54 18 53,5	1 10,2	59 29 24,3	0,3	13,0	54 17 07	35 42 53	59 29 37,1	51 47 44,1
	Arcturus	69 09 07,5	0 55,0	*			69 08 08,0	20 51 52,0	19 59 30,4	51 47 19,1

1823 Month.	Stars Observed.	Meridian Altitude.	Corrected Reflection.	Mean Declination.	Nutation. Aberration.	True Meridian Altitude.	Zenith Distance.	True Declination.	Latitude South.
		° ′ ″	″	° ′ ″	″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
July 7	α Centauri . .	58 53 03 N.	0 32,8	60 19 03,2 S.	8,4	59 59 30,8 N.	30 03 29,8 S.	29 59 56,8	0 03 32,4
	Antares . .	67 48 18 S.	0 31,7	"		67 48 51,3 S.	37 18 08,7 S.	37 01 48,7 S.	0 07 41
10	ι Centauri . .	58 28 03	1 19,5	60 20 35,2 S.	8,5	59 17 04,8	30 42 55,2	29 35 07,8	0 08 09,3
	Antares . .	68 06 35,3 N.	0 33,6	"		68 06 01,3 N.	23 53 58,1 S.	23 05 41,9	0 07 50,9
	ε Centauri . .	58 52 13	0 32,9	60 19 03,2 S.	8,4	59 59 49,5	31 07 10,0	29 19 50,0	0 08 17,9
	Antares . .	67 49 50,3 S.	0 31,7	"		67 49 18,6 S.	37 18 16,8 S.	36 01 43,2	0 07 33,6
11	δ Centauri . .	58 18 13,3	1 19,3	60 20 35,2 S.	8,5	59 17 37	30 42 23	29 34 37,8	0 07 48,8
	Antares . .	68 06 58 N.	0 33,1	"		68 06 04,4 N.	23 53 55,6 S.	23 05 41,8 S.	0 07 14,2
	ε Centauri . .	58 52 23	0 32,9	60 19 03,2 S.	8,4	59 59 50,5	31 07 09,5	29 19 57	0 08 07,5
	Antares . .	67 49 23 S.	0 31,7	"		67 48 51,3 S.	37 18 34,7 S.	36 01 48,3 S.	0 07 41,7
	γ Hydræ . .	58 18 03 S.	1 19,3	"		58 41 17,7 S.	30 18 42,3 S.	31 59 34,1 S.	0 07 50,9
13	Antares . .	68 06 58	0 33,1	"		68 06 04,8	23 54 04,6	23 05 41,3	0 07 35,1
	ε Centauri . .	58 52 18	0 32,9	60 19 03,2	8,4	59 59 49,9	31 07 10,1	29 19 49,1	0 08 07,1
	Antares . .	67 49 23 S.	0 31,7	"		67 48 51,3 S.	37 18 34,7 S.	36 01 48,3 S.	0 07 41,7
15	ε Centauri . .	58 52 23 S.	0 32,9	60 19 03,2	8,4	59 59 49,4	31 07 10,6	29 19 49,4 S.	0 07 41,4
16	ε Centauri . .	58 53 04	0 32,9	60 19 03,2	8,5	59 59 51,8	31 07 08,2	29 19 07,2	0 07 36,0
	Antares . .	67 49 18,5 S.	0 31,7	"		67 48 47,8 S.	37 18 12,2 S.	36 01 58 S.	0 07 29,8
17	ε Centauri . .	58 53 03,5 N.	0 32,9	60 19 03,2	8,4	59 59 03,3 N.	31 06 56,7 S.	29 19 07,3 S.	0 07 49,4
	Antares . .	67 49 18 S.	0 31,7	"		67 48 46,3 S.	37 18 13,7 S.	36 01 58 S.	0 07 43,3
	γ Hydræ . .	58 47 03,3 S.	1 19,3	"		58 41 30,9 S.	30 18 29,1 S.	31 59 31,3 S.	0 07 38,9

Note.—The Asterisks in the Column of "Mean Declination" are placed to show, that the Declinations of the Stars were taken from the Greenwich Almanac; being then corrected for Nutation and Aberration.

Latitude. By the pole-Star North of the Zenith (L.)

1823 Month.	Limbs.	Meridian Altitude.	Corrected Reflection.	Parallax.	Sun's Semi Diameter.	True Meridian Altitude of Sun's Centre.	Zenith Distance.	Declination.	Latitude South.
		° ′ ″	″	″	′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
May 14	L. L.	67 37 40 S.	31,7	8,5	16 30,0	67 53 17,8 S.	37 28 53,8 S.	15 01 27,8 S.	0 27 26,0
15	L. L.	67 12 14	31,6	8,5	15 56,8	67 28 47,5	37 54 07,5	15 02 00,8	0 27 17,0
16	L. L.	66 46 24	31,5	8,7	15 45,0	67 02 03	38 20 03	15 05 51,5	0 27 15,0
20	L. L.	64 05 18	31,2	8,9	15 08,8	65 05 07,5	40 17 08,5	15 11 41,5	0 27 04,5
21	L. L.	63 36 31,5	30,6	8,8	15 09,8	64 09 09	41 13 39	15 04 19,5	0 27 18,5
23	L. L.	63 03 01	30,5	8,9	15 07,3	63 53 50,7	41 46 09,3	15 18 30,3	0 27 29
27	L. L.	61 44 38	30,0	8,9	15 08,3	63 0 02,4	43 39 57,6	15 19 03,3	0 27 09,1
29	L. L.	61 21 41,5	29,2	8,9	15 09,3	62 50 09,6	43 49 50,4	15 09 51	0 27 19,4
July 6	L. L.	60 19 20,5	28,4	8,9	15 05,6	60 05 33,7	46 34 08,3	15 01 47,9	0 27 17,4
7	L. L.	60 16 59	28,7	8,9	15 05,8	60 31 05,4	46 08 15,6	15 07 47,5	0 27 21,1
8	L. L.	60 13 43	28,5	8,9	15 05,8	60 28 00,0	46 11 30,0	15 04 05,5	0 27 19,1

1838 Month.	Limb.	Meridian Altitude.	Corrected Reduction.	Parallax.	Sun's Semi Diameter.	True Meridian Altitude of Sun's Center.	Zenith Distance.	Declination.	Latitude South.
		° ′ ″	− ″	+ ″	+ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
July 9	L. L.	63 29 28 N.	25,3	4,0	15 45,7	63 45 01,4 N	25 14 58,6 S	22 27 49,1 N	3 47 19,5
10	L. L.	63 36 30,5	25,1	4,0	15 45,7	63 52 14,1	26 07 45,9	22 29 31,6	3 47 14,3
11	L. L.	63 44 15,5	25,9	4,0	15 45,7	63 59 59,3	26 0 20,7	22 19 59,2	3 47 21,5
12	L. L.	63 51 55,5	25,8	4,0	15 45,8	64 07 19,5	25 52 40,5	22 03 05	3 47 35,5
13	L. L.	64 0 28	25,6	4,0	15 45,8	64 15 59,2	25 44 07,8	21 56 48,8	3 47 19
14	L. L.	64 09 05,5	25,2	4,0	15 45,8	64 24 30	25 35 30	21 48 06,6	3 47 20,4
15	L. L.	64 18 13	25,1	4,0	15 45,9	64 33 37,8	25 26 22,2	21 39 07	3 47 15,2
17	L. L.	64 37 23	25,9	4,0	15 46	64 52 48	25 07 12	21 19 55,5	3 47 16,5

Latitude of Rangoon.

By the Stars (R.)

Day of Month	Star Observed.	Meridian Altitude.	Corrected Refraction.	Mean Declination.	Annual Variation.	Aberration.	True Meridian Altitude.	Zenith Distance.	True Declination.	Latitude North.
		° ′ ″	″	° ′ ″	″	″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
May 2	α Ursæ Maj. . .	89 58 9,6	54,79	27 19 57	0,07	10,91	89 59 25,4	64 7 25,6 s.	25 59 34,9 n.	3 47 19,7
	α Crucis . .	21 51 54,4	55	62 6 55,7	0,09	13,72	21 50 55,8	68 10 50,5 s.	62 7 14,37 s.	3 47 53,9
	β Crucis . .	25 5 13,8	50,0	58 59 58,5	0,13	19,90	25 4 53,8	64 54 57,2	58 53 7,9	3 47 53,7
	β Centauri . .	31 58 0,9	44	69 50 31,8	7,81	20,31	31 57 57,1	59 42 57,1	69 30 47,6	3 47 50,5
	α Centauri . .	35 49 0,8	38	60 6 59,4	19	7,05	35 48 48,8	56 19 11,2	60 6 53,4	3 47 57,2
	γ Crucis . .	37 41 50	35,8	56 6 47,80	0,2	17,51	37 41 31,7	58 19 28,3	56 7 29	3 48 1,7
	γ Ursæ Maj. .	38 39 37,5	34	34 40 34 n.	0,0	10,0	38 39 23,5	55 19 36,5 s.	34 41 0,1 n.	3 47 59,4
	ε Crucis . .	39 5 31,5	33	59 43 00,0 s.	0,06	19,01	39 5 37,5	54 56 22,5 s.	59 43 38,5 s.	3 47 53

Latitude. By the Sun—North of the Zenith (R.)

Day of Month	Limb.	Meridian Altitude.	Corrected Refraction.	Parallax.	Sun's Semi Diameter.	True Meridian Altitude.	Zenith Distance.	Corrected Declination.	Latitude North.
		° ′ ″	″	″	′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
May 14	L. L. . .	53 16 50,5	58	6	15 45,0	63 32 28,5	26 27 31,5 s	21 59 58,7 n	3 47 25,1
15	L. L. . .	63 15 0,5	52,0	6	15 45,4	63 30 55,0	26 29 5,0	21 1 26,0	3 47 25,5
16	L. L. . .	63 34 57,5	51,4	6	15 45,1	63 49 51,2	26 10 8,8	21 22 31,2	3 47 27,0
June 8	L. L. . .	63 45 7,5	25,9	6	15 47,2	63 49 53,5	26 10 6,5	22 22 36,0	3 47 26,1
9	L. L. . .	63 44 50	25,9	6	15 47,0	63 48 05,5	26 11 54,5	22 20 39,0	3 47 26,5

Results of the Observations

for the

Latitude of Bencoolen (L.)

By the Northern Stars, and Sun North of the Zenith.	° ′ ″	*By the Southern Stars.*	° ′ ″
β Ursæ Maj.	3 48 01,1 s.	α Crucis	3 47 05,8 s.
	3 47 43		3 48 01,1
γ Ursæ Maj.	3 47 17,8		3 48 09,8
	3 47 33,6		3 47 49,3
	3 47 26,3		3 47 50,3
η Ursæ Maj.	3 47 40,7		3 47 41,3
	3 47 36,9		3 47 47,5
	3 47 39		3 47 55,5
Arcturus	3 47 12		3 47 48,8
	3 47 14,3		3 47 49,8
	3 47 20,7		3 47 43,5
	3 47 18,7	γ Crucis	3 47 22,5
	3 47 12,1	δ Crucis	3 47 16,2
	3 47 16,9		3 47 24,1
	3 47 18,3		3 47 29,8
	3 47 19,1		3 47 37,9
α Coronæ	3 48 05		3 47 22,7
	3 48 02,9	β Centauri	3 47 32,4
	3 48 07,1		3 47 22,4
	3 47 51,6		3 47 40,5
	3 47 56,9		3 47 47,8
	3 47 49,4		3 48 04
γ Draconis	3 47 59,8		3 47 44,1
	3 47 59,6		3 48 02,1
Sun	3 47 25,1		3 47 54,5
	3 47 17,3	α Centauri	3 48 17,5
	3 47 14,9	Antares	3 47 53
	3 47 24,0		3 47 40
	3 47 19,5		3 47 41
	3 47 39		3 47 33,6
	3 47 32,1		3 47 41,2
	3 47 31,4		3 47 46,3
	3 47 22,4		3 47 49,3
	3 47 24,1		3 47 58,6
	3 47 28,4		
	3 47 18,5		
	3 47 14,3		
	3 47 21,5		
	3 47 35,5		
	3 47 19		

By the Northern Stars, and Sun North of the Zenith.	° ′ ″	*By the Southern Stars.*	° ′ ″
Sun	3 47 10,8 s.		
	3 47 11,9		
	3 47 16,5		
Mean	3 47 30,13	Mean	3 47 43,80 s.

	° ′ ″
Latitude of Bencoolen by the Northern Stars . . .	3 47 30,13 s.
do. do. Southern Stars . . .	3 47 43,80
Mean . . .	3 47 38 s.

Regulus. (R.)

By the Northern Stars, and Sun North of the Zenith.	° ′ ″	*By the Southern Stars.*	° ′ ″
β Ursæ Maj.	3 47 18,7 s.	α Crucis	3 47 43,8 s.
γ Ursæ Maj.	3 47 20,4	β Crucis	3 47 44,7
Sun	3 47 23,1	β Centauri	3 47 50,3
"	3 47 25,5	α Centauri	3 47 42,9
"	3 47 27,5	γ Crucis	3 48 1,7
"	3 47 28,1	δ Crucis	3 47 20
"	3 47 29,5		
Mean	3 47 27,1 s.	Mean	3 47 43,37 s.

By combining these Observations (*R.*) with the former (*L.*) we have for the Latitude of Bencoolen 3° 47′ 37″,5 or only half a Second different from the mean of the latter, which it will be seen is 3° 47′ 39″ S. and this I consider the *Latitude of Bencoolen.*

RESULTS of the OBSERVATIONS

At ROCCOLLES,

For the TIME, *Longitude, and Rates of the* CHRONOMETERS. (L.)

1822.	Time of Chronometer 201.			Equation of equal Altitudes.	Apparent Noon by Chronometer 201.	Equation of Time.	Mean Noon by Chronometer 201.	Chronometers Slow or Fast for Mean Time.			Rate per Day.		
Month.	Forenoon.	Afternoon.	Mean.					272 Slow.	207 Slow.	Earnshaw Slow.	201.	207.	Slow above.
	h. ′ ″	h. ′ ″	h. ′ ″	″	h. ′ ″	″	h. ′ ″	h. ′ ″	h. ′ ″	h. ′ ″	″	″	″
April 30	7 43 38,0	19 50 14,0	13 47 00,0	5,0	10 08 19,0	1 00,1	10 03 31,2	1 20 09,2	1 20 31,0	1 18 11,0			
31	8 13 44,7	19 59 11,0	13 76 01,5	5,2	10 08 06,0	1 15,9	10 03 41,8	1 20 24,8	1 20 46,7	1 18 26,7	−00,8	+08,1	−07,9
May 1	7 58 30,4	19 44 23,0	13 51 33	5,2	10 08 33,9	1 30,7	10 03 31,0	1 20 37	1 20 58,1	1 18 43,1	11	01,0	00,0
2	7 58 48,5	19 43 37,3	13 51 13,9	5,2	10 08 14,1	1 13,6	10 03 27,5	1 20 33,5	1 20 55,5	1 18 31,5	10,8	03,0	00,4
3	7 58 42,5	19 44 56,8	13 51 34,1	5,0	10 08 34,0	1 00,5	10 03 33,5	1 20 37	1 20 58,8	1 18 34,8	09,3	01,7	01,3
4	7 58 19	19 45 19,9	13 51 39,1	5,5	10 08 39,0	1 00,1	10 03 39,1	1 20 37	1 20 58,8	1 18 34,8	10,1	01,8	00,1
5	7 58 37,9	19 39 43,5	13 51 39,8	5,5	10 08 39,8	0 48,8	10 03 50,7	1 20 48,5	1 21 10,3	1 18 46,3	10,4	00,0	01,8
May 6	7 58 30,5	19 20 19,5	13 51 25,0	5,0	10 08 18,9	0 47,2	10 03 31,7	1 20 28,1	1 20 50,0	1 18 25,1	09,0	01,7	0,10
7	7 57 40,4	19 19 50,7	13 51 15,5	5,0	10 08 11,8	0 33	10 03 38,8	1 20 28,1	1 20 50,4	1 18 25,4	09,0	01,7	0
	Chronometer 207.			—	Chronometer 207.	—	Chronometer 207.						
July 1	8 18 53,7	19 58 19,0	13 58 11	4,2	10 08 09,0	0 15,0	10 03 54,3	1 47 09,3	1 47 31,3	1 45 06,7	12,6	00,4	+09,0
2	8 15 37,6	19 51 51,4	13 58 00	4,8	10 08 00,9	0 01,3	10 03 59,7	1 47 09,3	1 47 31,3	1 45 06,7	12,3	00,7	09,8
3	8 15 17	19 51 51,3	13 58 03,1	4,3	10 08 03,9	0 08,4	10 03 55,5	1 47 04,1	1 47 26,1	1 45 01,5	12,9	00,3	11,2
4	8 14 34,2	19 50 19,8	13 58 14,5	4,4	10 08 10,3	0 14,3	10 03 56,0	1 47 04,1	1 47 26,1	1 45 01,5	12,1	00,3	07,8
5	8 14 11,3	19 50 37	13 58 09,3	4,0	10 08 09,7	0 13,7	10 03 56,0	1 47 04,1	1 47 26,1	1 45 01,5	12,3	00,7	08,7
6	8 13 16,1	19 53 20,9	13 58 01,5	4,3	10 08 10,8	0 10,6	10 03 59,9	1 47 09,3	1 47 31,3	1 45 06,7			

1823.	Times by Chronometer 297.			Equation of equal Altitudes.	Apparent Noon by Chronometer 297.	Equation of Time.	Mean Noon by Chronometer 297.	Chronometer Slow or Fast for Mean Time.			Rate per Day.		
Month.	Forenoon.	Afternoon.	Mean.					291 Slow.	292 Slow.	Earnshaw.	291.	297.	Earnshaw.
	h. ′ ″	h. ′ ″	h. ′ ″	″	h. ′ ″	″	h. ′ ″	h. ′ ″	h. ′ ″	h. ′ ″			″
July 7	8 45 06,9	12 34 07,3	10 39 36,1	1,8	10 39 34,3	4 20,7	10 35 13,6	1 49 11,4	1 24 46,4	1 25 31,4	−71,0	+04,4	+09,4
8	8 44 53,4	12 34 62,5	10 39 47,8	1,0	10 39 45,9	4 20,5	10 35 15,4	1 49 22,6	1 24 44,6	1 25 23,1	71,9	01,8	06,3
9	8 44 40,8	12 35 17,8	10 39 59,4	2,0	10 39 57,4	4 20,8	10 35 17,6	1 49 26,1	1 24 42,6	1 25 17,4	69,8	08,2	07,7
10	8 44 27,9	12 35 56,3	10 40 13,1	2,0	10 40 11,1	4 48,5	10 35 22,5	1 49 58,7	1 24 37,7	1 25 07,7	10,0	03,0	13,7
11	8 44 13,5	12 36 34,5	10 40 24,0	2,1	10 41 21,0	4 57,4	10 36 21,5	1 50 06,5	1 24 35,5	1 25 01,5	14,3	01,7	00,7
12	8 43 38,1	12 35 30,6	10 40 34,4	2,2	10 40 32	5 05,6	10 35 26,4	1 50 15,6	1 24 33,6	1 24 56,6	09,8	01,9	04,9
13	8 43 40,5	12 31 32,6	10 40 46,5	2,4	10 40 44,1	5 13,3	10 35 30,8	1 50 31,7	1 24 29,1	1 24 45,2	16,1	04,4	11,2
14	8 43 28	12 38 24	10 40 58	2,0	10 40 55,8	5 20,5	10 35 35,3	1 50 47,7	1 24 24,7	1 24 32,7	16	04,5	12
15	8 43 07,8	12 39 15	10 41 09,7	2,5	10 41 06,7	5 27,6	10 35 39,1	1 51 04,9	1 24 20,9	1 24 23,9	17,2	03,8	08,3
16	8 40 33,9	12 36 66,9	10 41 18,9	2,5	10 41 16,3	5 34,0	10 35 42,3	1 51 20,7	1 24 17,7	1 24 11,7	15,8	03,2	12,2
17	8 42 10,8	12 43 22,6	10 40 27,3	2,7	10 41 24,6	5 40	10 35 44,3	1 51 31,4	1 24 15,6	1 24 04,8	10,7	02,3	07,3
1823		*Earnshaw.*		—	*Earnshaw.*	—	*Earnshaw.*						
April 10	9 18 26	9 34 14,5	11 56 29,3	2,5	11 56 27,8	1 30,1	11 54 49,7	"	"	9 03 10,8	"	"	14,2
11	9 23 51,9	9 31 42,6	11 56 17,8	2,6	11 56 20,4	1 40,6	11 55 03,8	"	"	9 04 38,2			

RESULTS of the OBSERVATIONS

At Bassessen

For the Time, Longitude, and Rates of Chronometers in 1823. (R.)

1823 Month.	Mean of Times by Chronometer No. 391.	Altitudes Corrected for Error of Sextant.	Bdistance	Parallax	Time Altitude of the Sun's Centre.	Sun's Declination.	Apparent Time.	Equation of Time.	Mean Time.	Chronometer Slow on Time for Mean Time. No. 391 Slow.	No. 397 Slow at Noon.	Error.	Rate per Day. No. 391	No. 397	Error.
April 20	h. ' " 1 22 29,7	° ' " 13 0 15	" 31	" 8,7	h. ' " 10 53 34,3	° ' " 11 21 53,3	h. ' " 3 0 5,4	" 3,5	h. ' " 3 28 18,9	h. ' " 1 59 35,8	h. ' " 1 55 37,37	h. ' " 1 51 7,87	"	"	"
22	18 21 [illegible]	13 45 9,5	32,7	9,0	38 32	12 27 7,3	21 2 33,3	3	21 29 [illegible]	1 57 11,8	1 53 38,0	1 50 4,43	−19,37	−0,06	−4,20
30	18 23 37,3	14 32 22,5	30,7	7,7	35 44	14 31 18,3	20 17 35,0	3	20 44 17,8	1 58 55,7	1 56 18,9	1 53 41,14	9,84	+0,07	0,39
May 5	18 1 49,3	15 37 19,8	30,5	8,0	41	15 18 35,9	19 44 13,3	2,9	19 47 20,9	1 56 36,3	1 53 57,61	1 51 18,81	7,89	0,05	0,39
6	18 25 59	15 49 0	29,8	8,27	36	15 39 21,7	20 5 0 40,3	2,7	20 7 43	1 59 3	1 55 30,30	1 51 57,59	8,20	0,05	0,39
7	18 9 40,3	16 18 30,87	29,5	8,0	36,5	16 33 9,8	19 58 38,7	2,5	20 1 13,2	1 59 14	1 55 33,98	1 51 53,96	8,11	0,05	0,39
8	18 49 32,3	16 58 7,3	29,3	8,0	37,3	17 0 31,3	20 29 59,3	2,3	20 32 [illegible]	1 59 34,2	1 55 53,77	1 52 13,37	10,02	0,39	7,68

By Equal Altitudes.

1823 Month.	Times by Chronometer No. 391. Forenoon.	Afternoon.	Mean.	Equation of Time.	Apparent Noon by Chronometer.	Equation of Time.	Mean Noon by Chronometer.	Chronometer Slow on Time for Mean Time. No. 391 Slow.	No. 397 Slow.	Error.	Rate per Day. No. 391	No. 397	Error.
May 13	h. ' " 9 15 39,5	h. ' " 14 58 36,41	h. ' " 12 17 13,5	" +7,69	h. ' " 12 18 10,70	" +3 50,84	h. ' " 12 21 [illegible]	h. ' " 1 59 46,81	h. ' " 1 55 39,91	h. ' " 1 51 33,01	"	"	"
14	9 13 41,39	14 57 37,85	12 17 39,62	5,65	12 18 11,15	3 57,77	12 21 9,00	1 59 50,34	1 55 38,56	1 51 26,84	= 6,72	+ 0,07	−6,72
15	9 12 [illegible]	14 56 [illegible]	12 17 [illegible]	5,61	12 18 9,61	4 4,74	12 21 8,77	1 59 54,85	1 55 39,93	1 51 25,01	5,79	0,71	5,79

Month.	Mean Time for Chronometer No. 391.	Altitudes Corrected for Error of the Sextant.	Refraction.	Parallax.	True Altitude of the Sun's Centre.	Sun's Declination.	Apparent Time.	Equation of Time.	Mean Time.	Chronometer Slow on Mean Time.		Rate per Day.	
										No. 391.	Earnshaw.	No. 391	Earnshaw.
1833	h. ′ ″	° ′ ″	′	″	° ′ ″	° ′ ″	h. ′ ″	′ ″	h. ′ ″	h. ′ ″ Slow.	h. ′ ″ Slow.	″	″
April 11	17 33 45,85	61 26 10	21	+ 4	61 25 49	9 01 25,25	22 10 50,81	+ 1 1,47	22 17 28,28	6 43 22,53	0 4 43,55		
13	17 29 42,01	60 20 10	21	4	60 20 43	9 5 29,61	22 13 20,89	0 57,75	22 14 18,53	6 44 17,64	0 4 7,64	− 37,7	+ 28,99
	Earnshaw.												
29	20 59 15,5	57 20 1,25	20	1,5	57 19 43,75	14 19 43,3	22 10 18,75	− 0 16,01	22 7 22,04	6 47 11,34	1 13 7,34	14,33	14,5
30	20 53 19	57 27 21,2	20,5	1,5	57 21 5,7	14 48 14,1	22 11 49,16	0 56,49	22 8 52,67	6 47 10,05	1 14 52,05	15,55	15,7
May 1	20 38 05	54 55 1,85	19,75	1,5	54 56 19,4	15 5 19,2	22 14 19,09	2 16,6	22 12 4,36	6 47 15,36	1 14 41,36	19,08	19,19
2	20 9 5,15	50 55 1,65	19,75	1,5	50 56 20,7	15 24 42,2	22 14 49,99	2 13,94	22 12 36,04	6 48 03,68	1 14 27,68	25,59	8,07
3	19 55 55	53 50 2,85	19,5	1,5	53 52 20,5	15 43 58,3	22 11 24,59	2 10,89	22 9 13,70	6 48 09,17	1 14 15,17	10,7	13,55
4	19 32 48,15	49 31 57,85	19,5	1,5	49 33 05,85	16 02 56,8	22 7 58,99	2 27	22 5 31,99	6 48 03,82	1 14 5,82	14,34	10,88
5	19 10 36 34,75	46 41 18,05	19,3	1,5	46 43 00,05	16 21 58,09	22 4 9,91	2 39,98	22 1 29,93	6 48 0,02	1 13 54,02	14,96	13,28
6	18 48 39	44 10 39,55	19,15	1,5	44 12 17,4	16 39 14,09	22 1 17,87	2 57,87	21 58 19,9	6 48 02,7	1 13 41,8	11,60	14,00
7	18 25 55,85	41 48 19,15	19	1,5	41 49 54	16 55 5,78	21 57 20,55	3 15,06	21 54 5,49	6 48 09,01	1 13 57,01	17,79	13,15
8	18 3 19	39 24 38,95	18,75	1,5	39 25 6,1	17 6 33,59	21 53 20,97	3 43,06	21 49 43,91	6 48 09,69	1 13 11,69	14,02	19,39
9	17 40 45,5	36 47 34,27	18,5	1,5	36 48 47,4	17 22 41,69	21 49 36,95	4 10,95	21 45 24,95	6 48 21,45	1 12 39,45	13,53	13,55
10	17 18 29,05	34 27 34,27	18	1,5	34 28 9,8	17 38 35,15	21 45 49,45	4 38,49	21 41 10,96	6 48 38,14	1 12 46,14		

For the Longitude of Bencoolen. (L.)

Chronometer 391.

					h.	′	″
April 20	Mean Noon at Bencoolen	Chronometer Slow			1	36	39,3
21	,,	at Bencoolen	,,	Slow	1	36	38,8
23	,,	at Bencoolen	,,	Slow	1	37	38,1

Chronometer 397.

April 20	Mean Noon at Bencoolen	Chronometer Slow			1	35	24,8
21	,,	at Bencoolen	,,	Slow	1	35	23,7
23	,,	at Bencoolen	,,	Slow	1	35	22,1

Chronometer Earnshaw.

April 20	Mean Noon at Bencoolen	Chronometer Slow			1	34	11,5
21	,,	at Bencoolen	,,	Slow	1	34	10,7
23	,,	at Bencoolen	,,	Slow	1	34	09,1

Rates of the Chronometers at Bencoolen.

1802 Month.		Rates of the Chronometers. 391.	397.	Earnshaw.	Remarks.
		″	″	″	
April	20	— 09,0	+ 02,1	— 07,9	
	21	03,9	06,6	05,6	Interval of 4 days.
	23	10,4	05,0	00,4	
	25	09,3	01,7	05,2	
	27	11,3	01,9	09,1	
	28	10,8	09,0	03,4	
May	2	05,8	01,8	03,8	Interval of 3 days.
	3	09,9	01,7	08,1	
		08,6	02,03	06,26	Mean at Bencoolen.
		11,3	05,00	03,56	Mean at Madras.
Mean Rates.		10,10	03,55	04,91	Of Madras and Bencoolen.

For the Longitude of Bencoolen. (R.)

1799								h.	′	″
			Chronometer 291.							
April	97 at	7	10	Mean Noon at Bencoolen	Chronometer	Slow		1	36	93,5
	92 at	93	1	„ at Bencoolen	„	Slow		1	37	11,9
	20 at	20	14	„ at Bencoolen	„	Slow		1	38	90,7
			Chronometer 297.							
April	20	Mean Noon at Bencoolen		Chronometer	Slow			1	36	97,87
	24	„ at Bencoolen		„	Slow			1	36	59,33
May	6	„ at Bencoolen		„	Slow			1	35	57,51
			Chronometer Earnshaw.							
April	20	Mean Noon at Bencoolen		Chronometer	Slow			1	34	7,83
	24	„ at Bencoolen		„	Slow			1	34	41,63
May	6	„ at Bencoolen		„	Slow			1	33	53,51

Rates of the Chronometers at Bencoolen.

1799	Rates of the Chronometers.			Remarks.
March.	291	297	Earnshaw.	
	″	″	″	
April				
20 to 24	−28,57	− 0,95	− 8,50	
May 1	9,81	+ 9,65	6,10	
6	7,66	2,07	5,54	
7	9,30	1,45	9,15	
8	9,11	1,87	+ 7,93	
9	10,09	1,70	7,08	
	6) 36,59	6) 9,09	6) 43,09	
	6,49	1,51	8,31	Mean at Bencoolen.*
	11,1	3,08	3,16	Mean at Madras.
Mean Rates...	10,89	2,29	4,39	Of Madras and Bencoolen.

* *The old Government House.*

Difference of Longitude between the Madras Observations and Bencoolen. (L.)

Chronometer 281.

	h.	′	″
April 20, Chronometer Slow for Mean Time at Bencoolen	1	36	28,5
March 13, Chronometer Slow for Mean Time at Madras		61	56,6
Difference . . .	1	35	31,7
Mean Rate of Chronometer of Madras and Bencoolen in an interval of 37 days 22h 30′		00	30,10
Difference of Longitude in Time between Madras and Bencoolen	1	27	59,18
April 21, Chronometer Slow for Mean Time at Bencoolen	1	36	38,9
March 13, Chronometer Slow for Mean Time at Madras		61	56,6
Difference . . .	1	34	41,8
Mean Rate of Chronometer of Madras and Bencoolen in an interval of 38 days 22h 30′		00	40,85
Difference of Longitude in Time between Madras and Bencoolen	1	27	58,67
April 25, Chronometer Slow for Mean Time at Bencoolen	1	37	28,1
March 13, Chronometer Slow for Mean Time at Madras		61	56,6
Difference . . .	1	35	35,5
Mean Rate of Chronometer of Madras and Bencoolen in an interval of 42 days 22h 30′		67	58,33
Difference of Longitude in Time between Madras and Bencoolen	1	25	61,17

Chronometer 287.

	h.	′	″
April 20, Chronometer Slow for Mean Time at Bencoolen	1	25	31,8
March 13, Chronometer Slow for Mean Time at Madras			01,5
Difference . .	1	25	30,3
Mean Rate of Chronometers of Madras and Bencoolen in an interval of 37 days 22h 30′		01	30,78
Difference of Longitude in Time between Madras and Bencoolen	1	28	03,08
April 21, Chronometer Slow for Mean Time at Bencoolen	1	25	29,7
March 13, Chronometer Slow for Mean Time at Madras			01,5
Difference . .	1	25	29,2
Mean Rate of Chronometers of Madras and Bencoolen in an interval of 38 days 22h 30′		01	29,87
Difference of Longitude in Time between Madras and Bencoolen	1	28	02,47
April 25, Chronometer Slow for Mean Time at Bencoolen	1	25	23,1
March 13, Chronometer Slow for Mean Time at Madras			01,5
Difference . .	1	25	27,6
Mean Rate of Chronometer of Madras and Bencoolen in an interval of 42 days 22h 30′		01	49,47
Difference of Longitude in Time between Madras and Bencoolen	1	28	07,07

Chronometer Escaubar.

	h.	′	″
April 20, Chronometer Slow for Mean Time at Bencoolen	1	94	17,5
March 15, Chronometer Slow for Mean Time at Madras		03	45,7
Sum ..	1	99	58,5
Mean Rate of Chronometer of Madras and Bencoolen in an interval of 37 days 22h 30′ ...		03	60,94
Difference of Longitude in Time between Madras and Bencoolen	1	99	57,36

April 21, Chronometer Slow for Mean Time at Bencoolen	1	94	19,7
March 15, Chronometer Slow for Mean Time at Madras		03	46,7
Sum ..	1	30	66,4
Mean Rate of Chronometer of Madras and Bencoolen in an interval of 38 days 22h 30′ ...		03	11,14
Difference of Longitude in Time between Madras and Bencoolen	1	99	55,95

April 23, Chronometer Slow for Mean Time at Bencoolen	1	94	45,1
March 15, Chronometer Slow for Mean Time at Madras		03	46,7
Sum ..	1	30	31,8
Mean Rate of Chronometer of Madras and Bencoolen in an interval of 42 days 22h 30′ ...		03	30,79
Difference of Longitude in Time between Madras and Bencoolen	1	97	61,09

Difference of Longitude by Chronometers between the Madras Observatory and Bencoolen.

Chronometer 391.

	h.	′	″	h.	′	″
By 1st Set of Observations	1	97	59,19			
2d "	1	97	58,67			
3d "	1	98	01,17			
Mean ..				1	97	59,65

Chronometer 397.

By 1st Set of Observations	1	98	07,02			
2d "	1	98	03,47			
3d "	1	98	07,07			
Mean ..				1	98	04,52

Chronometer Escaubar.

By 1st Set of Observations	1	98	50,95			
2d "	1	98	55,99			
3d "	1	97	61,60			
Mean ..				1	98	55,17

Difference of Longitude between the Madras Observatory and Bencoolen. (E.)

Chronometer 201.

	h.	′	″
April 23, Chronometer Slow for Mean Time at Bencoolen	1	26	25,3
March 13, Chronometer Slow for Mean Time at Madras	0	1	56,6
Difference . . .	1	24	29,3
Mean Rate of Chronometer at Madras and Bencoolen in an interval of 38 days 1h 31′ . . .	0	6	51,64
Difference of Longitude in Time between Madras and Bencoolen	1	27	57,04

April 23, Chronometer Slow for Mean Time at Bencoolen	1	27	11,8
March 13, Chronometer Slow for Mean Time at Madras	0	1	56,6
Difference . . .	1	25	15,2
Mean Rate of Chronometer at Madras and Bencoolen in an interval of 41 days 12h 33′ . . .	0	7	8,84
Difference of Longitude in Time between Madras and Bencoolen	1	28	5

April 30, Chronometer Slow for Mean Time at Bencoolen	1	28	23,7
March 13, Chronometer Slow for Mean Time at Madras	0	1	56,6
Difference . . .	1	26	26,1
Mean Rate of Chronometer at Madras and Bencoolen in an interval of 48 days 19h 46′ . . .	0	8	21,25
Difference of Longitude in time between Madras and Bencoolen	1	28	9,35

Chronometer 207.

April 23, Chronometer Slow for Mean Time at Bencoolen	1	26	27,87
March 13, Chronometer Slow for Mean Time at Madras	0	0	5,5
Difference . . .	1	26	22,37
Mean Rate of Chronometer at Madras and Bencoolen in an interval of 37 days 23h 32′ . . .	0	1	26,88
Difference of Longitude in Time between Madras and Bencoolen	1	27	49,25

April 24, Chronometer Slow for Mean Time at Bencoolen	1	26	28,83
March 13, Chronometer Slow for Mean Time at Madras	0	0	5,5
Difference . . .	1	26	23,83
Mean Rate of Chronometer at Madras and Bencoolen in an interval of 41 days 20h 32′ . . .	0	1	26,04
Difference of Longitude in Time between Madras and Bencoolen	1	27	50,87

Chronometer 297.

May 6, Chronometer Slow for Mean Time at Bencoolen			
March 13, Chronometer Slow for Mean Time at Madras			
Difference			
Mean Rate of Chronometer at Madras and Bencoolen in an Interval of 53 days			
Difference of Longitude in Time between Madras and Bencoolen			

Chronometer Earnshaw.

April 29, Chronometer Slow for Mean Time at Bencoolen			
March 13, Chronometer Fast for Mean Time at Madras			
Sum			
Mean Rate of Chronometer at Madras and Bencoolen in an interval of 37 days			
Difference of Longitude in Time between Madras and Bencoolen			

April 28, Chronometer Slow for Mean Time at Bencoolen			
March 13, Chronometer Fast for Mean Time at Madras			
Sum			
Mean Rate of Chronometer at Madras and Bencoolen in an interval of 41 days			
Difference of Longitude in Time between Madras and Bencoolen			

May 6, Chronometer Slow for Mean Time at Bencoolen			
March 13, Chronometer Fast for Mean Time at Madras			
Sum			
Mean Rate of Chronometer at Madras and Bencoolen in an interval of 53 days			
Difference of Longitude in Time between Madras and Bencoolen			

Differences of Longitudes by Chronometers between the Mean Observatory and Bencoolen.

Chronometer 301.

By 1st Set of Observations			
2d "			
3d "			
Mean			

Chronometer 297.

By 1st Set of Observations			
2d "			
3d "			
Mean			
Mean of two Chronometers			

For the Longitude of Bencoolen.

1823		Chronometer 391.	h.	′	″
June	6	Mean Noon at Madras Chronometer Slow	3	30	13,5
	7	" at " " "	3	30	30,5
	8	" at " " "	3	30	51,6

Chronometer Earnshaw.

June	6	Mean Noon at Madras Chronometer Fast	0	21	21,5
	7	" at " " "	0	21	25,5
	8	" at " " "	0	21	45,4

*Rates of the Chronometers at Bencoolen.**

1823	Rates of the Chronometers.		Remarks.
Month.	391.	Earnshaw.	
	″	″	
April 30 to May 1	— 14,93	+ 14,5	
2	18,53	19,17	
3	19,28	13,59	
4	23,88	8,87	
5	16,7	13,65	
6	14,24	10,88	
7	14,05	13,72	
8	11,96	14,00	
9	11,72	13,15	
10	14,92	12,37	
11	15,83	15,35	
	178,67	144,65	
Mean ..	16,23	13,11	At Bencoolen.

* Captain Watson's Garden.

Difference of Longitude between the Madras Observatory and Bencoolen.

	Chronometer 391.	h.	′	″
May 11,	Chronometer Slow for Mean Time at Bencoolen	4	50	9,05
June 6,	Chronometer Slow for Mean Time at Madras	3	30	13,8
	Difference ...	1	19	53,55
	Mean Rate of Chronometer at Bencoolen and Madras in an interval of 26 days 18 29″...	0	7	18,80
	Difference of Longitude in Time between Bencoolen and Madras	1	27	14,35

	h.	′	″
May 11, Chronometer Slow for Mean Time at Benoulen	4	50	9,25
June 7, Chronometer Slow for Mean Time at Madras	3	30	30,5
Difference ...	1	19	38,55
Mean Rate of Chronometer at Benoulen and Madras in an interval of 27 days 1h 28′ ...	0	7	35,2
Difference of Longitude in Time between Benoulen and Madras	1	27	14,07
May 11, Chronometer Slow for Mean Time at Benoulen	4	50	9,02
June 8, Chronometer Slow for Mean Time at Madras	3	30	31,6
Difference ...	1	19	37,92
Mean Rate of Chronometer at Benoulen and Madras in an interval of 28 days 1h 28′ ...	0	7	39,54
Difference of Longitude in Time between Benoulen and Madras	1	27	0,97

Chronometer Earnshaw.

	h.	′	″
May 11, Chronometer Slow for Mean Time at Benoulen	1	19	42,55
June 6, Chronometer Fast for Mean Time at Madras	0	21	24,5
Sum ...	1	34	7,05
Mean Rate of Chronometer at Benoulen and Madras in an interval of 26 days 1h 28′ ...	0	5	56,5
Difference of Longitude in time between Benoulen and Madras	1	29	10,55
May 11, Chronometer Slow for Mean Time at Benoulen	1	17	42,55
June 7, Chronometer Fast for Mean Time at Madras	0	21	35,5
Sum ...	1	34	28,05
Mean Rate of Chronometer at Benoulen and Madras in an interval of 27 days 1h 28′ ...	0	6	39,38
Difference of Longitude in Time between Benoulen and Madras	1	28	7,05
May 11, Chronometer Slow for Mean Time at Benoulen	1	17	42,55
June 8, Chronometer Fast for Mean Time at Madras	0	21	45,4
Sum ...	1	34	27,05
Mean Rate of Chronometer at Benoulen and Madras in an interval of 28 days 1h 28′ ...	0	6	23,86
Difference of Longitude in Time between Benoulen and Madras	1	28	4,07

Difference of Longitude by Chronometers between the Madras Observatory and Benoulen.

Chronometer 391.

	h.	′	″	h.	′	″
By 1st Set of Observations	1	27	14,09			
2d "	1	27	10,93			
3d "	1	27	0,97			
Mean ...				1	27	12,86

Chronometer Earnshaw.

	h.	′	″	h.	′	″
By 1st Set of Observations	1	29	10,32			
2d "	1	28	7,05			
3d "	1	28	4,07			
Mean ...				1	28	7,14
Medium of two Chronometers ...				1	27	40,14

RESULTS OF THE OBSERVATIONS

At Bonthoyan,

For the True Bearings of Four Mountain Tops

And the Variation of the Compass (L.)

Month.	Apparent Time.	Horary Angles.	Dist. Sun's L. Limb and Top of Mountain Taken corrected for Error and Semi-diameter.	Altitude.	Horizontal Ang.	True Bearing.	Magnetic Bearing.	Variation of the Compass.
	h. ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
May 30	6 55 13	83 45 45	48 34 47	37 56 15	42 29 57	25 16 58	23 58 26	1 18 32 E.
July 4	6 57 15,5	84 03 08	61 49 42,5	39 41 33	41 31 21	23 29 02	23 08 26	1 21 37
5	6 55 39	83 49 39	61 43 56,5	39 42 39	41 29 45	23 28 48	23 07 36	1 21 37
7	6 56 21,5	83 54 26	61 34 23,5	39 37 39	41 26 50	23 31 14	23 08 26	1 22 48
11	6 56 0	83 50 00	61 00 05,7	39 21 32	41 08 28	23 23 34	23 08 50	1 14 44
12	6 55 05,1	83 39 14	60 55 55,8	39 20 38	41 03 49	23 23 32	23 08 26	1 15 06
					Mean	23 13 45 E.		1 18 10 E.

For the Variation of the Compass (K.)

1801 Month.	Time.	Sun's Declination.	True Amplitude.	Magnetic Bearing by the Compass.	Variation.
	h. ′ ″	° ′ ″	° ′	° ′	° ′
May 30	5 43 51	21 4 51,9 n.	w. 68 50½ w.	w. 70 1½ w.	1 22½ E.
	5 57 1	21 5 00,2	68 10	70 36½	1 26½

Variation.

	° ′
By 1st Observation	1 22½ E.
2d Observation	1 26½
Mean . .	1 24 E.

Reasons of Dissatisfaction from the K. K. and of the Rate 200 h. 5m. (K.)

Triangles.	Angles.	Distances from the intermediate objects to
	° ′ ″	
Station of Observation	117 12 00	Fort Marlborough Tower . . . . . Feet. 3677,5
n. Γ, end of the Base	43 08 00	
Fort Marlborough Tower	19 40 00	10319,5

The Latitude and Longitude of Fort Marlborough Turret, deduced from the Station of Observation in Latitude 2° 47′ 38″ S. and Longitude 102° 15′ 41″ E.

Name of	Name.	Bearings observed by the Meridian.	Distance.	Distance on the Meridian.	Distance on the Perpendicular.	Latitude.	Longitude from Station of Observation.	Longitude from Greenwich.
		° ′ ″	feet.	feet.	feet.	° ′ ″	° ′ ″	° ′ ″
Station of Observation	Fort Marlbro' Turret	23 12 48 × 0	9074	7393 ×	248,3 ×	2 47 38,8 ×	0 0 00 ×	102 15 41 ×

To the Marlborough Turret from Bat Island, 7393 feet.

Triangles.	Angles.	Distances from the intersected objects to	Feet.	Miles.
Fort Marlborough Turret	125 46 15	North high Peak (or Eye Peak)	197809	37,802
Bat Island	49 18 26		234791	44,469
North high Peak (Eye Peak)	5 55 55			
Fort Marlborough Turret	138 18 0	Conspicuous high Hill or Gibraltar	239602	45,384
Bat Island	34 58 40	Pulo	175859	33,842
Conspicuous high Hill	6 51 19			
Fort Marlborough Turret	109 19 15	Sugar Loaf Peak, or Gunong	174	27,841
Bat Island	48 23 0	Broken	120178	22,689
Sugar Loaf Peak	2 17 45			
Fort Marlborough Turret	150 16 13	Lion's Ramp	69558	13,176
Bat Island	9 30 0		100141	18,968
Lion's Ramp	4 14 43			
Fort Marlborough	64 42 0	Buffalo point	40145	7,603
Bat Island	77 39 56		40951	7,757
Buffalo point	37 40 10			
Fort Marlborough	92 44 0	St. Pongarra's (Staff or Tree)	2281	0,431
Bat Island	3 49 0		99547	3,420
St. Pongarra's (Staff)	153 27 0			

At Pulo Bay.

East End of the Road from West End of the Road, 2442,7 feet.

Triangles.	Angles.	Bearings from the intersected objects to	Feet.	Miles.
East end of the Road	61 29 23	Bat Island	42999	8,20
West end of the Road	118 29 13		43299	8,208
Bat Island	1 01 15			

* The distance from Fort Marlborough to Bat Island is obtained by the difference of longitude, and the bearing of Bat Island from Fort Marlborough Turret.

Triangles.	Angles.	Distances from the corrected objects to	Feet.	Mètres.
East end of the Base ...	126° 25′ 0″	Hamilton's Tomb	27434	8,360
West end of the Base ...	53 23 39			
Hamilton's Tomb	4 34 20			
East end of the Base ...	157 54 0	Argyle Hill	23091	6,58
West end of the Base ...	11 37 15		27220	8,077
Argyle Hill	1 18 45			

The Latitudes and Longitudes of Places in the vicinity of Bartholomew, deduced from Four Meridional Transits in Latitude 5° 47′ 21″ S. and Longitude 105° 15′ 44″ E.

Stations at	Names of Places.	Bearings of Stations to the Meridian of Fort Marlborough Transit.	Distances.	Distances on the Meridian	Distances on the Perpendicular	Latitude.	Longitude from Fort Marlborough's Transit.	Longitude from Greenwich.
Fort Marlboro'	Bat Island	55° 0′ 15″ S. W.	Feet. 52302	Feet. 51094 S.	Feet. 10668 W.	5° 50′ 29″ S.	0° 4′ 53″ W.	105° 11′ 31″ E.
	N. Peak on Lye Peak	1 11 25 S. W.	197809	197760 S.	4134 W.	3 14 48	0 0 41	106 15 42
	Common Pulos ...	23 9 15 S. E.	186853	146518	3109 S.	2 29 25	0 5 29 S.	105 21 32
	Common Rookus ...	81 19 30	168686	78394	19107 S.	3 34 21	0 11 09	104 27 06
	Lion's Rump	59 43 0 S. E.	101618	52870 S.	61989 S.	3 31 41	0 10 29	105 26 07
Bat Island.	Mt. Pengrove's Tree	27 14 15 S. W.	9781	9014	1978 W.	5 47 53	0 0 28 W.	105 15 37
	W. end of the Base...	68 53 45 S. E.	42295	15815	39167 S.	3 54 45 S.	0 1 09 S.	105 27 09
	E. end of the Base...	36 37 45 S. E.	42295	25164	33967 S.	3 54 55 S.	0 1 10	105 27 25
W. end of the Base.	Hamilton's Tomb ...	5 30 14 S. W.	27434	27334	2667 W.	2 49 34 S.	0 0 37	105 16 41
	Argyle Hill	10 53 05 S. E.	23091	22657	4119 S.	3 51 09 S.	0 0 47	105 21 21

Latitudes of Bat Island. (By the Stars.) (L.)

Month.	Name.	Meridian Altitude.	Corrected Declination.	Mean Declination.	Diff.	Diff.	True Meridian Altitude.	Zenith Distance.	True Declination.	Latitude South.
May 15.	ν Ursæ Maj.	59° 59′ 51,3″ S.	0° 19′ 0″	59° 18′ 11,8″ S.	7,9	5,9	53° 37′ 39,9″ S.	36° 22′ 20,1″ S.	59° 18′ 00,7″ S.	5° 39′ 11,1″
	δ Centaur. ...	21 21 08 S.	17,9	19 30 29 S.	7,4	7,0	14 18 31,8 S.	75 40 04,7 S.	19 30 17,6 S.	5 47 11,8
	ε Centaur. ...	23 43 05,5 S.	19,8	19 18 46,8	8,1	5,9	15 14 07,3	74 45 07,3	19 07 0,0	5 35 47,3

By the Sun.

Month.	Name.	Meridian Altitude.	Corrected Declination.	Equation.	Sun's Semi-Diameter.	True Meridian Altitude of Sun's Centre.	Zenith Distance.	Declination.	Latitude.
May 15	Sun's L. L. ...	68° 35′ 18″ S.	0° 22′ 3	0′ 8,0″	15′ 57,0	67° 11′ 43,3 S.	22° 48′ 13,0 S.	19° 34′ 07,0 S.	5° 36′ 00

Results of the Observations

For the Latitude of Rat Island. (L.)

By the Northern Stars.	° ′ ″	*By the Southern Stars.*	° ′ ″
α Urse Maj.	3 50 11,4 s.	β Centauri	3 50 44,4 s.
Sun	3 50 06,9	α Centauri	3 51 07,3
Mean . .	3 50 09,7	Mean . .	3 50 56,35 s.

Latitude of Rat Island by the Northern Stars . .	3 50 09,7 s.
do. do. Southern Stars . .	3 50 56,35
Mean . .	3 50 29,5 s.

For the Variation of the Compass.

1822 Month.	Time.	Sun's Declination.	True Amplitude.	Magnetic Bearing by the Compass.	Variation.
	h. ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
May 16	18 8 20	19 8 29,9 s.	s. 73 48 37,7 s.	s. 69 14 19 s.	1 34 27 s.

At Rat Island.

For the Time, and Longitude. (L.)

1822 Month.	Times by Chronometer 291. Forenoon.	Afternoon.	Mean.	Equation of equal Altitudes.	Apparent Noon by Chronometer 291.	Equation of Time.	Mean Noon by Chronometer.	Chronometers Slow or Fast by Mean Time. 291 Slow.	292 Slow.	Eastern Slow.
	h. ′ ″	h. ′ ″	h. ′ ″	″	h. ′ ″	″	h. ′ ″	h. ′ ″	h. ′ ″	h. ′ ″
May 16	8 15 19	12 17 16,5	10 16 14,2	+3,4	10 16 17,2	+3 37,9	10 20 35,0	1 29 44,8	1 24 19,[illegible]	1 25 31,8

At Rat Island.

For the Time and Longitude. (R.)

1822 Month.	Times by Chronometer 291. Forenoon.	Afternoon.	Mean.	Equation of equal Altitudes.	Apparent Noon by Chronometer.	Equation of Time.	Mean Noon by Chronometer.	Chronometers Slow or Fast by Mean Time. No. 291.	No. 292.	Eastern.
	h. ′ ″	h. ′ ″	h. ′ ″	″	h. ′ ″	h. ″	h. ′ ″	h. ′ ″	h. ′ ″	h. ′ ″
May 16	8 15 18	12 17 16,5	10 16 14,22	+3,4[illegible]	10 16 17,[illegible]	9,9 32,[illegible]	10 20 18,[illegible]	1 30 41,[illegible]	1 25 12,[illegible]	1 25 31,[illegible]

Difference of Longitude between Bencoolen and Rat Island. (L.)

Chronometer 291.

		h. ′ ″
May	16, Chronometer Slow for Mean Time at Rat Island	1 29 44,4
	18, Chronometer Slow for Mean Time at Bencoolen	1 40 02,9
Difference of Longitude in Time between Bencoolen and Rat Island		0 9 17,[illegible]

Chronometer 397.

May 15,	Chronometer Slow for Mean Time at Rat Island	1	05	37,1
16,	Chronometer Slow for Mean Time at Bencoolen	1	05	55,2
Difference of Longitude in Time between Bencoolen and Rat Island		0	0	17,1

Chronometer Earnshaw.

May 15,	Chronometer Slow for Mean Time at Rat Island	1	06	31,8
16,	Chronometer Slow for Mean Time at Bencoolen	1	06	50,8
Difference of Longitude in Time between Bencoolen and Rat Island		0	0	19,0

Difference of Longitude in Time by Chronometer 391	00	00	17,8
Difference of Longitude in Time by Chronometer 397	00	00	17,1
Difference of Longitude in Time by Chronometer Earnshaw	00	00	18,6
Mean...	00	0	17,83
	°	′	″
Difference of Longitude in Degrees between Bencoolen and Rat Island	0	4	28

The same as given by the Triangles.

LATITUDE OF TAPPANOOLY ISLAND.

1799 Month	Stars Observed.	Meridian Altitude.	Correction Table Value.	Mean Declination.	Variation.	Observation.	True Meridian Altitude.	Zenith Distance.	True Declination.	Latitude North.
Aug. 11	Antares . .	68 18 42 s	0 57,3	*			69 14 13,3 s	97 45 44,3 s	27 31 49,9 s	1 43 34,6
12	γ Draconis . .	80 28 02 n	1 10,2	*			80 13 09,8 n	10 46 50,1 n	51 30 57,9 n	1 43 38,7
	α Lyræ	52 07 03,3	0 20,1	*			52 08 36	38 38 04	29 37 34,8	1 46 35,8
13	Antares . .	68 18 20 s	0 57,3	*			69 14 13,3 s	97 45 49,3 s	27 31 42,9 s	1 43 28,0
	α Scorpionis . .	64 20 18	0 37,5	25 27 54,1 s	5,1	8,9	64 18 43,1	115 8 19,0	25 52 47	1 43 50,0
	α Scorpionis . .	51 39 03,8	0 47,2	26 08 01,3	7,0	8,9	51 38 09,7	38 41 37,8	25 26 13,5	1 43 17,0
	γ Draconis . .	80 28 06 n	1 10,2	*			80 28 56,9 n	10 47 04,2 n	51 30 57,7 n	1 43 38,5
	α Lyræ	52 07 00,3	0 20,1	*			52 08 08	38 38 28	29 37 39,7	1 44 31,8
15	γ Draconis . .	80 28 13,5	1 10,2	*			80 28 13,3	10 46 45,7	51 30 29,7	1 44 14,1
16	γ Draconis . .	80 28 6,5	1 10,2	*			80 28 08,3	10 47 01,3	51 30 25,8	1 43 57,5
	α Lyræ	52 07 20	0 20,1	*			52 08 28,5	38 38 21,3	29 37 30,2	1 44 18,9
17	γ Draconis . .	80 28 03,5	1 10,2	*			80 28 03,3	10 47 09,7	51 30 23,5	1 43 50,6
	α Lyræ	52 07 19	0 20,1	*			52 08 28,3	38 38 31,7	29 37 26,5	1 44 25
	β Lyræ	58 34 55,3	0 32,5	33 05 41,8 s	5,7	10,1	58 34 05,8	31 25 54,2	33 30 45,9	1 43 37,7
	ζ Sagittarii . .	55 09 37,5	0 30,3	29 37 41,3 s	5,4	10,1	55 09 08	34 50 52	29 37 37,3	1 43 34,6
20	α Scorpionis . .	51 39 03,5	0 47,2	26 08 09,5	7,0	8,9	51 38 27,8	38 41 30,2	25 26 43	1 43 31,6
	ζ Sagittarii . .	55 09 20,5	0 30,2	29 37 28,7	5,4	10,1	55 08 27,8	34 51 09,2	29 37 35,1	1 43 37,7
Sept. 1	α Scorpionis . .	51 39 03,5	0 47,2	26 08 09,8	7,0	8,9	51 38 33,9	38 41 26,1	25 26 15	1 43 31,8
	γ Draconis . .	80 28 03 n	1 10,2	*			80 28 03,8 n	10 46 56,2 n	51 30 09,6	1 44 01,0
	ζ Sagittarii . .	55 09 17,5 s	0 30,2	29 37 18,3	5,4	10,1	55 08 32,0 s	34 51 27,8 s	29 37 34,2 s	1 43 32,5
	α Lyræ	52 07 09,5 s	0 20,1	*			52 08 08 s	38 38 24 s	29 37 28,1 s	1 44 01,1
	ζ Sagittarii . .	55 09 15,5 s	0 30,2	29 37 11	5,4	10,1	55 08 43,8	34 51 17 s	29 37 40,1 s	1 43 37,9
	β Cygni	34 09 55,5 s	0 55,8	27 35 25 s	4,3	12,8	34 08 59,2 s	55 51 30,8 s	27 35 29,5 s	1 43 02
	β Cygni	34 09 28	0 55,8	34 45 5,7	4,3	12,8	34 08 59,8	55 51 30,2	27 35 29,6	1 43 29
	β Cygni	34 09 05,5	0 55,8	34 45 29,2	4,3	12,8	34 08 34,8	55 51 25,2	27 35 34,6	1 43 05,2
	α Cygni	45 05 25	0 49,1	*			45 06 01,9	44 53 58,1	44 59 13	1 43 24,0
	α Ursæ	46 30 44 s	1 08,6	57 48 45,8 s	6,2	8,5	46 27 44 s	89 59 18 s	57 48 19,1 s	1 43 51,0
	Fomalhaut . .	57 43 38 s	0 39,1	*	7,0	9,1	57 43 43,8 s	58 17 13,1 s	29 29 30,6 s	1 43 30,1
21	Scorpionis . .	51 39 23	0 47,2	26 08 02	7,0	8,9	51 39 33,7	38 41 05,8	25 26 15	1 43 14,8
	γ Draconis . . .	80 28 28 n	1 10,2	*			80 27 17,8 n	10 47 04,2 n	51 30 09,6 n	1 43 06,0
	ζ Sagittarii . .	55 09 09 s	0 30,2	29 37 19,7	5,4	10,1	55 08 48,7 s	34 51 10,3 s	29 37 29,4 s	1 43 31,3
	α Lyræ	52 07 08 s	0 20,1	*			52 08 28,5 s	38 38 31,5 s	29 37 37,0 s	1 44 09,2
	ζ Sagittarii . .	55 09 13 s	0 30,2	29 37 41,0	5,4	10,1	55 08 43,3 s	34 51 33,3 s	29 37 37,8 s	1 43 35,1
	α Sagittarii . .	43 20 59	0 45,5	38 28 55,1	4,5	9,0	43 21 39,1	46 38 20,9	38 50 39,9	1 43 41
	β Cygni	34 09 56,5 s	0 55,8	27 35 29,5 s	4,3	12,8	34 09 30,7 s	55 51 27,3 s	27 35 33,2 s	1 43 02,9
	β Cygni	34 09 38	0 55,8	34 45 37,8	4,3	12,8	34 09 30,8	55 51 29,1	27 35 33,9	1 43 41,9
	α Persei . . .	51 0 33,8	1 09,4	47 47 49,7	6,2	8,9	50 59 42,4 s	39 01 15,9 s	47 47 36,3 s	1 43 26,1
	γ Cygni	38 03 03,8 s	0 40,6	39 48 58,0 s	5,2	12,3	38 02 19,8 s	51 57 40,4 s	39 48 41,8 s	1 44 01,4
	α Cygni	45 05 53	0 49,1	*			45 06 22,9	44 53 37,1	44 59 13,7	1 43 49,6
	α Ursæ	46 30 33	1 08	57 48 45,9	6,2	8,5	46 27 44 s	89 59 18 s	57 48 19 s	1 43 32
	Fomalhaut . .	57 43 38	0 39,1	*			57 43 44,8 s	58 17 15,1 s	29 29 29,7 s	1 43 30,4
22	Lyræ	38 03 03,8 s	0 39,5	*			38 02 39 s	51 57 21 s	39 48 41,8 s	1 44 02
	ζ Lyræ	58 34 55,3	0 32,5	33 05 41,8 s	5,6	10,1	58 34 05,8	31 25 54,2	33 30 41,5	1 43 37,7
	α Cygni	45 05 52	0 49,1	45 45 59	6,2	12,3	45 06 07,8	44 53 52,2	45 45 59,8	1 44 07

The Asterisk in the Column of "Mean Declination" are placed to show, that the Declinations were taken from the Nautical Almanac; being more correctly computed than Maskelyne and Mayer's.

RESULTS OF THE OBSERVATIONS

For the Latitude of Tappanooly Island. (L.)

By the Northern Stars.	° ′ ″	By the Southern Stars.	° ′ ″
γ Draconis	1 43 58,7 n	Antares	1 43 54,8 n
	1 43 54,5		1 43 59,6
	1 43 57,7	ε Scorpionis	1 43 59,9
	1 43 52,8	δ Scorpionis	1 43 17,9
	1 44 01,6		1 43 21,9
	1 43 50,9		1 43 21,8
α Lyræ	1 44 10,5		1 43 14,3
	1 44 01,2	ε Sagittarii	1 43 27,7
	1 44 14,9		1 43 53,5
	1 44 15,9		1 43 38,9
	1 44 04,1	ζ Sagittarii	1 43 14,8
	1 44 00,7		1 43 27,9
	1 44 05		1 43 30,1
β Lyræ	1 43 52,9	ε Sagittarii	1 43 48
	1 43 49,9	ε Pavonis	1 43 18,14
β Cygni	1 44 03,2	ε Gruis	1 43 31,9
	1 44 03,2		1 43 32,0
	1 44 02	Fomalhaut	1 43 50,5
δ Cygni	1 43 50		1 43 50,6
	1 43 46,9		
γ Cygni	1 44 05,9		
	1 44 01,4		
α Cygni	1 43 50,9		
	1 43 49,6		
Mean . .	1 43 59,91	Mean . .	1 43 33,64

Latitude of Tappanooly Island by the Northern Stars . . .	1 43 59,91 n
do. do. Southern Stars . . .	1 43 33,64
Mean . . .	1 43 46,78

RESULTS of the OBSERVATIONS

at Tarrawoolgy,

For the Time, Longitude and Rates of the Chronometers (L.)

1822.	Time of Chronometer 207.			Equation of equal Altitudes	Apparent Noon by Chronometer 207.	Equation of Time.	Mean Noon by Chronometer 207.	Chronometers Slow or Fast by Mean Time.			Rate per Diem.		
Month.	Forenoon.	Afternoon.	Mean.					207 Slow.	201 Slow.	Excess Slow.	207.	201.	Excess.
	h. ′ ″	h. ′ ″	h. ′ ″	″	h. ′ ″	″	h. ′ ″	h. ′ ″	h. ′ ″	h. ′ ″	″	″	″
Aug. 17	9 29 14,7	1 22 39,5	10 16 29,6	9,2	10 56 30,5	25 99,1	10 51 30,9	1 39 33,8	1 43 18,8	1 03 34,9			
19	9 29 10,8	1 22 49,0	10 16 19,7	9,3	10 56 17,4	24 30,6	10 51 46,8	1 39 33,3	1 43 20,9	1 03 47,5	+0,5	−21,7	+14,2
23	9 29 10,8	1 23 10,0	10 16 10,9	9,3	10 56 09,6	24 41,1	10 51 53,8	1 39 33,5	1 43 48,3	1 03 47,5	1,0	18,0	13,0
25	9 21 42,7	1 23 13,5	10 15 59,0	9,2	10 55 57,8	24 37,5	10 51 55,3	1 39 33,5	1 43 53,5	1 03 14,5	−1,5	14,0	13,0
25	9 29 09,3	1 23 18,5	10 16 49,4	9,2	10 56 47,2	24 30,1	10 51 47,1	1 39 33,9	1 43 03,8	—	+0,5	11,5	
26	9 27 40,6	1 23 26,5	10 15 59	9,2	10 55 57,8	24 09,7	10 51 57,1	1 39 30,9	1 43 10,4	—	—	11,0	
28	9 27 39,3	1 23 29,5	10 15 14	9,2	10 55 12,9	23 41,5	10 51 27,2	1 39 31,3	1 43 29,3	—	0,3	13,3	
29	9 27 40,3	1 23 38,2	10 15 34,3	9,2	10 54 55,0	23 21,0	10 51 33,8	1 39 31,2	1 43 45,7	—	0,0	07,4	
30	9 26 07,4	1 23 39,8	10 14 49,5	9,2	10 54 40,3	23 19,8	10 51 20,7	1 39 31,3	1 43 54,8	—	0,0	09,1	
31	9 25 44,0	1 23 54,3	10 14 58,4	9,2	10 54 17,5	22 50	10 51 27,5	1 39 32,3	1 43 16,3	—	−0,5	10,9	
33	9 24 55,0	1 23 13,5	10 14 09,0	1,2	10 54 09,7	22 23,1	10 51 17,6	1 39 29,4	1 43 21,0	—	+0,1	03,4	
34	9 23 09,0	1 24 12,0	10 13 50,4	1,2	10 53 48,5	22 19,8	10 51 28,8	1 39 31,3	1 43 29,0	—	1,9	08,3	
35	9 23 19,6	1 23 47,0	10 13 33,5	1,2	10 53 31,5	22 04,1	10 51 27,5	1 39 28,3	1 43 10,9	—	−1,0	10,0	
Sept. 1	9 22 38,6	1 24 43,7	10 13 24,2	1,4	10 53 24,2	21 59,6	10 51 20,7	1 39 30,7	1 43 03,7	—	+0,8	10,5	
2	9 22 41,6	1 23 50,0	10 13 16,1	1,2	10 53 14,9	21 59,1	10 51 31	1 39 29	1 43 14	—	0,7	08,3	
3	9 18 31,2	1 23 43	10 10 36,7	1,4	10 50 37,5	21 23,1	10 51 24,5	1 39 32,4	1 43 08,4	—	1,6	10,4	

1822.	Times by Chronometer 297.			Equation of equal Altitudes.	Apparent Noon by Chronometer 297.	Equation of Time.	Mean Noon by Chronometer 297.	Chronometers Slow or Fast by Mean Time.			Rate per Day.		
Month.	Forenoon.	Afternoon.	Mean.					297 Slow.	291 Slow.	Earnshaw Slow.	297	291	Earnshaw.
	h. ′ ″	h. ′ ″	h. ′ ″	″	h. ′ ″	′ ″	h. ′ ″	h. ′ ″	h. ′ ″		″	″	″
				—		+					+ 0,5	—09,2	—
Sept. 4	8 17 45,5	1 22 31,8	10 30 40,2	1,3	10 30 39,9	0 34,5	10 31 23,4	1 08 20,8	1 40 34,8	—	2,0	13	—
6	8 20 14,9	1 19 54,3	10 30 04,6	1,0	10 30 03,6	1 33,8	10 31 37,4	1 08 22,8	1 50 00,8	—	0,7	12,9	—
8	8 17 50,2	1 22 55,3	10 40 05,1	0,8	10 40 05,0	2 13,8	10 31 38,8	1 08 21,2	1 50 20,2	—	0,8	07,7	—
10	8 14 12,8	1 21 53,9	10 48 06,1	0,1	10 48 06,0	3 35,8	10 31 41,8	1 08 18,2	1 51 23,2	—			

For the Longitude of Tappanooly.

1828. *Chronometer 201, at Bencoolen.*

		h.	′	″
July 17.	Mean Noon at Bencoolen Chronometer Slow	1	31	21,4

Chronometer 207.

		h.	′	″
July 17.	Mean Noon at Bencoolen Chronometer Slow	1	28	15,4

Chronometer Earnshaw.

		h.	′	″
July 17.	Mean Noon at Bencoolen Chronometer Slow	1	28	58,4

Rates of the Chronometers at Bencoolen.

1828. Month.		Rates of the Chronometers. 201.	207.	Earnshaw.	Remarks.
		″	″	″	
July	1				
	2	— 15,6	+ 03,4	+ 09,9	
	3	17,5	09,7	06,9	
	4	19,8	03,9	11,5	
	5	16,1	09,3	07,9	
	6	18,3	08,7	05,7	
	7	21,6	04,1	09,4	
	8	11,8	01,9	05,3	
	9	09,8	02,5	07,7	
	10	19,9	05,0	10,8	
	11	14,3	01,7	05,7	
	12	09,1	01,9	04,9	
	13	16,1	01,1	11,9	
	14	16,9	01,5	12	
	15	17,9	03,8	09,3	
	16	13,8	03,9	10,8	
	17	16,7	09,3	07,3	
		15,9	03,14	08,6	Mean.

Chronometer 201.

						h.	′	″
August 11.	Mean Noon at Tappanooly Chronometer Slow					1	45	19,8
12,	"	all	"	"	"	1	45	20,3
13,	"	all	"	"	"	1	45	41,3

Chronometer 207.

						h.	′	″
August 11.	Mean Noon at Tappanooly Chronometer Slow					1	08	35,8
12,	"	all	"	"	"	1	09	37,3
13,	"	all	"	"	"	1	08	38,3

Chronometer Earnshaw.

	h	′	″
August 11, Mean Noon at Tippoonuhy Chronometer Slow	1	03	34,8
12, " " " " "	1	03	36,3
13, " " " " "	1	03	37,5

Rates of the Chronometers at Tippoonuhy.

1822	Rates of the Chronometers.			Remarks.
Month.	281.	207.	Earnshaw.	
August 11				
10	— 11,7	+ 09,5	+ 11,5	
11	10,8	01,8	12,8	
11	11	— 0 1,8	12,8	
12	11,8	+ 02,3		2 Days.
10	11			
12	03,8	00,8		
	— 11,5	+ 00,33	+ 11,4	Mean at Tippoonuhy.
	03,8	01,14	08,8	Mean at Bonnetoa.
	12,33	01,7	11,1	Mean Rate.

Difference of Longitude between Bonnetoa and Tippoonuhy Island.

Chronometer 281.

	h	′	″
1822. *July* 17, Chronometer Slow for Mean Time at Bonnetoa	1	31	21,4
Aug. 11, Chronometer Slow for Mean Time at Tippoonuhy	1	49	19,5
Difference	0	18	18,0
Mean Rate of Chronometer at Bonnetoa and Tippoonuhy in an interval of 25 days	0	00	51,72
Difference of Longitude in Time between Bonnetoa and Tippoonuhy	0	17	09,3

July 17, Chronometer Slow for Mean Time at Bonnetoa	1	34	21,4
Aug. 10, Chronometer Slow for Mean Time at Tippoonuhy	1	43	29,5
Difference	0	08	08,1
Mean Rate of Chronometer at Bonnetoa and Tippoonuhy in an interval of 23 days	0	00	49,11
Difference of Longitude in Time between Bonnetoa and Tippoonuhy	0	17	50,9

July 17, Chronometer Slow for Mean Time at Bonnetoa	1	31	21,4
Aug. 13, Chronometer Slow for Mean Time at Tippoonuhy	1	48	47,5
Difference	0	17	26,1
Mean Rate of Chronometer at Bonnetoa and Tippoonuhy in an interval of 27 days	0	00	57,17
Difference of Longitude in Time between Bonnetoa and Tippoonuhy	0	17	50,9

Chronometer 197.

	h.	′	″
July 17, Chronometer Slow for Mean Time at Bencoolen	1	24	15,4
August 11, Chronometer Slow for Mean Time at Tappanooly	1	08	32,8
Difference	0	15	41,6
Mean Rate of Chronometer of Bencoolen and Tappanooly in an interval of 25 days		00	44,5
Difference of Longitude in Time between Bencoolen and Tappanooly	0	14	59,1

July 17, Chronometer Slow for Mean Time at Bencoolen	1	24	15,4
August 12, Chronometer Slow for Mean Time at Tappanooly	1	08	33,5
Difference	0	15	41,9
Mean Rate of Chronometer of Bencoolen and Tappanooly in an interval of 26 days		0	44,9
Difference of Longitude in Time between Bencoolen and Tappanooly	0	14	57,7

July 17, Chronometer Slow for Mean Time at Bencoolen	1	24	15,4
August 12, Chronometer Slow for Mean Time at Tappanooly	1	08	32,5
Difference	0	15	42,9
Mean Rate of Chronometer of Bencoolen and Tappanooly in an interval of 27 days		00	45,9
Difference of Longitude in Time between Bencoolen and Tappanooly	0	14	57,0

Chronometer Earnshaw.

July 17, Chronometer Slow for Mean Time at Bencoolen	1	24	04,4
August 11, Chronometer Slow for Mean Time at Tappanooly	1	03	54,8
Difference	0	18	09,6
Mean Rate of Chronometer of Bencoolen and Tappanooly in an interval of 25 days		04	37,5
Difference of Longitude in Time between Bencoolen and Tappanooly	0	13	32,1

July 17, Chronometer Slow for Mean Time at Bencoolen	1	24	04,4
August 12, Chronometer Slow for Mean Time at Tappanooly	1	05	40,5
Difference	0	18	23,9
Mean Rate of Chronometer of Bencoolen and Tappanooly in an interval of 26 days		04	48,6
Difference of Longitude in Time between Bencoolen and Tappanooly	0	13	35,3

July 17, Chronometer Slow for Mean Time at Bencoolen	1	24	04,4
August 12, Chronometer Slow for Mean Time at Tappanooly	1	05	07,5
Difference	0	18	56,9
Mean Rate of Chronometer of Bencoolen and Tappanooly in an interval of 27 days	0	04	56,7
Difference of Longitude in time between Bencoolen and Tappanooly	0	13	37,9

Difference of Longitude between Bengoolen and Tappanoole.

Chronometer 201.

	h.	′	″
By 1st Set of Observations	0	11	48,35
2d "	0	11	50,09
3d "	0	11	51,26
Mean ..	0	11	49,90

Chronometer 207.

	h.	′	″
By 1st Set of Observations	0	14	59,1
2d "	0	14	57,7
3d "	0	14	57,0
Mean ..	0	14	57,23

Chronometer Earnshaw.

	h.	′	″
By 1st Set of Observations	0	13	32,1
2d "	0	13	33,3
3d "	0	13	37,9
Mean ..	0	13	34,87

RESULTS OF THE OBSERVATIONS

At Tappanoole Island.

For the True Bearing of Sugar Loaf Peak, and the Variation of the Compass.

Month.	Apparent Time.	Hourly Angle.	Dist. of the Sun's No. Limb and Sugar-Loaf Peak, corrected for Error of Inst. and S. Diam.	Azimuth.	Horizontal Arc.	True Bearing.	Magnetic Bearing.	Variation of the Compass.
	h. ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
Aug. 31	5 59 31	67 23 0	77 0 19	81 22 07	76 59 49	21 38 04	20 20 15	1 17 49
	5 59 19	68 26 0	77 01 19	81 09 45	77 01 15	21 38 0	20 20 45	1 17 45
Sept. 1	5 64 16	66 51 15	76 30 34	81 46 33	76 34 10	21 40 35	20 20 15	1 19 20
3	5 80 13	67 22 10	76 17 22	82 04 07	76 15 20	21 20 33	20 20 15	1 19 18
					Mean ..	21 38 48		1 18 30

At SUGAR LOAF PEAK.

For the Time, and Longitude.

1827 Month.	Time by Chronometer 207 Foremost.	Altitude of the Sun corrected for Error, Refraction, &c.	Sun's Declination.	Latitude.	Apparent Time.	Equation of Time.	Mean Time.	Chronometer Slow of Fast for Mean Time. 207 Slow.	201 Slow.
	h. ′ ″	° ′ ″	° ′ ″	° ′ ″	h. ′ ″	′ ″	h. ′ ″	h. ′ ″	h. ′ ″
Sept. 5	7 37 40,5	69 19 30	7 03 44 n.	1 24 34 n.	9 00 43,2	1 11,6	9 05 31,6	1 08 11,1	1 49 20,1

Difference of Longitude between Tappanooly and Sugar Loaf Peak.

Chronometer 397.

		h.	′	″
Sept. 5,	Chronometer Slow for Mean Time at Sugar Loaf Peak	1	09	11,5
5,	Chronometer Slow for Mean Time at Tappanooly	1	09	01,0
Difference of Longitude in time between Tappanooly and Sugar Loaf Peak		0	00	10,5

Chronometer 391.

Sept. 5,	Chronometer Slow for Mean Time at Sugar Loaf Peak	1	49	37,5
5,	Chronometer Slow for Mean Time at Tappanooly	1	49	47,0
Difference of Longitude in Time between Tappanooly and Sugar Loaf Peak		0	00	10,5

Difference of Longitude in Time by Chronometer 397	0	00	13,5
Difference of Longitude in Time by Chronometer 391	0	00	10,5
Mean	0	00	12,
Difference of Longitude in Degrees between Tappanooly and Sugar Loaf Peak	0	03	00,

The Latitude and Longitude of Sugar Loaf Peak.

Station at	Name.	Bearings reduced to the Meridian.	Distance.	Distance on the Meridian	Distance on the Perpendicular	Latitude.	Longitude from Tappanooly	Longitude from Greenwich.
		° ′ ″	feet.	feet.	feet.	° ′ ″	° ′ ″	° ′ ″
Tappanooly	Sugar Loaf Peak	91 28 45 s w	17789	53070 s	17800 w	1 29 34 s	0 03 00, w	86 37 45 s

Latitudes of Fish Peninsula (L.)

Day of Month.	Stars Observed.	Meridian Altitude.	Corrected Refraction.	Mean Declination.	Semidiameter.	Correction.	True Meridian Altitude.	Zenith Distance.	True Declination.	Latitude North.
		° ′ ″	″		″		° ′ ″	° ′ ″	° ′ ″	° ′ ″
Sept. 17	α Lyræ	81 24 55,5	0 41,5	*	—	+	81 23 54 n	38 00 00 s	38 37 23,8 n	0 13 23,8
	β Cygni . . .	62 20 58,5	0 57,5	37 33 05,8 n	8,1	15,8	62 20 38	27 34 02	37 35 32	0 11 25
	α Pavonis . . .	37 10 40	1 03,5	57 07 08,3 s	7,6	7,8	37 10 39,5 s	52 50 05,5 s	57 17 10,0 s	0 12 05,5
	α Cygni . . .	45 12 10	0 52,0	*	—	+	45 10 53,8 n	44 37 34,8 s	44 39 18,5 n	0 11 43,1
18	α Gruis	42 07 05,5	0 58,5	47 08 47,5 s	7,6	8,1	42 07 51,0 s	48 00 34,4 s	47 45 40,5 s	0 12 51,5
	α Pavonis . . .	28 21 50	1 05,5	57 10 48,3 s	6,8	8,0	28 20 36,5 s	57 08 21,5 s	57 17 25,1 s	0 11 05,4
	Fomalhaut. .	58 15 05,5	0 51,0	*	—	+	58 13 54,5	30 45 00,7	30 33 30,8	0 11 29,8
19	α Pegasi . . .	63 04 25	0 55,5	27 07 05,1 n	7,1	8,1	63 04 35,5 n	26 55 28,5 n	27 07 17,2 n	0 11 48,8
	β Cygni . . .	66 20 10,5	0 57,5	27 59 00,0	6,8	8,0	66 20 43	23 34 17	27 59 37,8	0 11 20,4
	γ Cygni . . .	50 20 17,5	0 48	39 41 19,0	9,0	15,1	50 19 21,5	39 20 15,5	39 41 43,7	0 11 17,7

1827 Month.	Stars Observed.	Meridian Altitude.	Corrected Reduction.	Mean Declination.	Polaris.	Urs. Min.	True Meridian Altitude.	Zenith Distance.	True Declination.	Latitude North.
		° ′ ″	″	° ′ ″	+	+	° ′ ″	° ′ ″	° ′ ″	° ′ ″
Sept. 21	α Cygni ..	65 22 18	0 22,5	*			65 22 55,5	24 37 21,5	40 29 38,5	0 11 48,5
	β Cygni ..	56 32 45,5	0 58,4	33 18 55,1	1,8	13,7	56 33 17,5	33 26 42,5	33 18 34	0 11 51,5
	α Ursæ ..	59 33 32	0 58,5	47 48 47,2	1,7	1,5	61 33 56,1	28 26 3,9	47 48 47,2	0 11 48,7
	β Ursæ ..	48 09 18	0 58,6	47 48 55,5	1,7	1,5	49 10 10	40 49 50	47 48 39,4	0 11 47,6
	Fomalhaut	59 12 25,5	0 57,6	*			60 11 43,5	29 44 53,7	29 33 50,7	0 11 51

The Asterisks in the Column of "Mean Declination" are placed to show that the Declinations were taken from the Nautical Almanac, being those corrected for Nutation and Aberration.

Latitude of Pole Pendant. (E.)

By the Stars.

1827 Month.	Stars Observed.	Meridian Altitude.	Corrected Reduction.	Mean Declination.	True Meridian Altitude.	Zenith Distance.	True Declination.	Latitude North.
		° ′ ″	+	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
Sept. 5	α Lyræ	51 34 57,5	48,6	*	51 35 45,1	38 23 18,5 s	89 57 48,5 s	89 22 16,9
5	α Lyræ	51 35 51,5	48,1	*	51 36 39,6	38 23 21,3	89 57 44,8	89 22 12,7
	Fomalhaut .	58 58 38,7	51,8	*	59 50 30,5	30 43 29,7 s	89 53 5,8 s	89 18 0,8
11	α Lyræ	51 34 49,2	48,8	*	51 35 37,9	38 23 21,1 s	89 57 43,3 s	89 21 59
13	α Lyræ	51 34 47,7	48,3	*	51 36 36,0	38 23 23,6	89 57 47,8	89 22 3,8
	α Pavonis ..	39 39 3,5	85,74	57 11 22,8 s	39 40 49,2	37 39 39,8 s	97 17 49,2 s	89 21 56,4
	Fomalhaut .	59 58 38,3	51,4	*	60 49 30	29 54 5	89 53 3,5	89 21 59,4
27	α Pavonis ..	39 38 37,3	84,1	57 17 23,7 s	39 31 13,4	37 39 46,6	97 11 49,1	89 21 52,3
	α Cygni ..	65 22 27,5	50,5	*	65 23 45,5	24 37 14,5 s	89 59 59,9 s	89 24 28,5

Results of the Observations

For the Latitude of Pole Pendant. (E.)

By the Northern Stars.		By the Southern Stars.	
	° ′ ″		° ′ ″
α Lyræ	0 11 57,8 s	α Pavonis	0 11 51,8 s
β Cygni	0 11 55		0 11 50,4
	0 11 57,8	α Ursæ	0 11 51,8
γ Cygni	0 11 53,8		0 11 44,7
α Cygni	0 11 44,1	β Ursæ	0 11 51,6
	0 11 54,8	Fomalhaut	0 11 50,8
ε Cygni	0 11 51,1		0 11 52
δ Pegasi	0 11 49,8		
Mean	0 11 53,83	Mean	0 11 51,14

Latitude of Pole Pendant by the Northern Stars	0 11 57,1 s
Do. do. by the Southern Stars	0 11 51,14
Mean	0 11 54,5

Results. (R)

By Northern Stars.				*By Southern Stars.*			
	°	′	″		°	′	″
α Lyræ	00	11	34,3	Fomalhaut	00	10	09
α Lyræ	00	10	13,8	α Pavonis	00	11	36,5
α Lyræ	00	11	50	Fomalhaut	00	11	02,4
α Lyræ	00	11	51,6	α Pavonis	00	11	9,5
α Cygni	00	10	10,1				
Mean	00	11	35	Mean	00	11	9,1

Latitude.

	°	′	″
By Northern Stars	00	11	35
Southern Stars	00	11	9,1
Mean	00	11	18,5

* The Result by these Observations owing to a mistake in the Declination differed originally so much from that by the other Assistant, that I had rejected it in the deductions. Before however this part of the Report was printed, the mistake was discovered by the Assistant Robinson, who took the Observations, and the Result now differs very little from that by the Observations of the other Assistant—the deductions however were made by using the Observations of the latter.

RESULTS OF THE OBSERVATIONS

At Peso Panjono.

For the Time, Longitude and Rates of the Chronometers. (L.)

1822.	Times by Chronometer 397.			Equation of equal Altitudes.	Apparent Noon by Chronometer 397.	Equation of Time.	Mean Noon by Chronometer 397.	Chronometers Slow on Fast of Mean Time.			Rate per Day.		
Month.	Forenoon.	Afternoon.	Moon.					397 Slow.	391 Slow.	Eutrachon Slow.	397.	391.	Eutrachon.
	h. ′ ″	h. ′ ″	h. ′ ″	″	h. ′ ″	′ ″	h. ′ ″	h. ′ ″	h. ′ ″	h. ′ ″	″		
Sept. 17	8 11 56,3	1 10 27,1	10 44 12,7	+0,4	10 44 12,3	+5 20,2	10 49 32,4	1 10 27,0	1 34 14,8	—			
18	8 09 32,4	1 08 10,1	10 43 31,9	0,4	10 43 30,8	5 41,2	10 49 32,0	1 10 29	1 54 51	—	−00,4	−00,4	
19	8 07 43,8	1 17 14,4	10 42 22,1	0,2	10 42 28,9	7 05	10 49 33,0	1 10 25,1	1 53 19	0 59 42	+00,5	07,0	
20	8 15 19,1	1 07 19,6	10 41 14,8	+0,3	10 41 15,1	8 28	10 49 43,1	1 10 16,9	1 55 52,0	0 58 18,0	02,3	08,5	+00,9
21	8 10 44,3	1 10 25,8	10 40 35,1	0,5	10 40 35,6	9 07,9	10 49 43,5	1 10 16,5	1 53 10,5	0 57 45,5	00,2	00,8	10,6
Oct. 18	8 07 51,3	1 02 45,2	10 35 18,3	2,0	10 35 20,3	14 48,8	10 50 09,4	1 09 51,0	2 00 30,9	0 59 16,9	01,1	14,8	15,0
20	8 06 00,3	1 04 12,9	10 35 11,1	2,0	10 35 13,1	14 58,5	10 50 11,6	1 09 48,4	2 03 52,3	0 51 59,4	03,5	12,5	17,3
	Chronometer 391.				Chronometer 391		Chronometer 391				03,2	09,3	14,4
30	7 10 01,4	12 05 45,1	9 41 02,9	2,6	9 41 05,9	16 08,5	9 57 34,4	1 02 16,6	2 02 25,6	0 49 35,6	00,7	17,3	11,7
31	7 10 18,6	12 05 47,2	9 41 02,3	2,7	9 41 05,8	16 11,5	9 57 17,1	1 02 15,6	2 02 42,9	0 49 23,9			
Nov. 12	7 09 16,3	11 48 41,6	9 39 00,4	2,9	9 39 03,0	15 43,1	9 54 45,1	1 00 09,9	2 05 13,9	0 47 10,4	00,6	10,4	17,1
13	7 22 51,9	11 35 03,4	9 38 57,6	2,9	9 39 00,5	15 35,2	9 54 35,7	1 00 07,3	2 03 21,3	0 46 33,3	02,4	14,9	08,8
14	7 23 17,9	11 34 20,4	9 38 57,2	2,9	9 38 55,1	15 20,4	9 54 21,7	1 09 07,5	2 03 38,5	0 46 44,5			
	Chronometer 397.				Chronometer 397		Chronometer 397				00,2	10,7	12,5
16	8 21 00,7	12 50 18,4	10 35 44,9	2,8	10 35 40,8	15 06,3	10 50 53,1	1 00 06,9	2 05 59,9	0 46 18,9			
17	8 21 54,8	12 49 59,2	10 35 57,9	2,6	10 35 50,8	14 55	10 50 54,6	1 00 05,4	2 06 08,9	0 46 09,9	02,5	00,0	10,0

For the Longitude of Pulo Panjong.

Chronometer 391, at Tappanooly.

	h.	′	″
September 16, Mean Noon at Tappanooly Chronometer Slow	1	61	22,2

Chronometer 397.

September 12, Mean Noon at Tappanooly Chronometer Slow	1	08	18,2

Rates of the Chronometers at Tappanooly.

1827	Rates of the Chronometers.		Remarks.
Month.	391.	397.	
	″	″	
August 18			
19	— 07,4	+ 00,6	
20	08,1	00,4	
22	21,3	— 01,9	9 Days.
23	05,4	+ 00,1	
24	00,3	01,2	
25	12	— 01	
September 1	05,5	+ 00,5	7 Days.
2	08,3	00,7	
3	10,4	01,6	
4	08,2	00,8	
6	13,0	01,0	9 Days.
8	17,8	01,4	9 Days.
10	57	03,9	4 Days.
	— 10,32	+ 00,74	Mean.

Chronometer 391.

	h.	′	″
September 17, Mean Noon at Pulo Panjong Chronometer Slow	1	54	44,6
18, " at " " "	1	54	51
22, " at " " "	1	55	19

Chronometer 397.

September 17, Mean Noon at Pulo Panjong Chronometer Slow	1	10	27,6
18, " at " " "	1	10	28
22, " at " " "	1	10	26,1

Rates of the Chronometers at Pulo Panjong.

1822	Rates of the Chronometers.			Remarks.
Month.	291.	287.	Emeshaw.	
	"	"	"	
September 17				
18	— 06,4	— 00,4		
22	28	+ 01,9		4 Days.
29	33,9	00,2	+ 03,6	4 Days.
28	17,6	00,4	33,1	9 Days.
	— 07,86	+ 01,11	+ 18,45	Mean at Pulo Panjong.
	18,32	00,74		Mean at Tappanooly.
	00,07	00,93		Mean Rate.

Difference of Longitude between Tappanooly and Pulo Panjong.

Chronometer 291.

	h.	'	"
1822. Sept. 12, Chronometer Slow for Mean Time at Tappanooly	1	51	23,2
Sept. 17, Chronometer Slow for Mean Time at Pulo Panjong	1	54	44,6
Difference . .	0	03	21,4
Mean Rate of Chronometer of Tappanooly and Pulo Panjong in an interval of 5 days...		00	45,35
Difference of Longitude in Time between Tappanooly and Pulo Panjong	0	02	26,05
September 12, Chronometer Slow for Mean Time at Tappanooly	1	51	23,2
September 18, Chronometer Slow for Mean Time at Pulo Panjong	1	54	51
Difference . .	0	03	27,8
Mean Rate of Chronometer of Tappanooly and Pulo Panjong in an interval of 6 days...		00	54,42
Difference of Longitude in Time between Tappanooly and Pulo Panjong	0	02	33,38
September 12, Chronometer Slow for Mean Time at Tappanooly	1	51	23,2
September 22, Chronometer Slow for Mean Time at Pulo Panjong	1	55	19
Difference . .	0	03	55,8
Mean Rate of Chronometer of Tappanooly and Pulo Panjong in an interval of 10 days..	0	01	20,70
Difference of Longitude in Time between Tappanooly and Pulo Panjong	0	02	25,10

Chronometer 287.

	h.	'	"
September 12, Chronometer Slow for Mean Time at Tappanooly	1	08	18,9
September 17, Chronometer Slow for Mean Time at Pulo Panjong	1	10	22,6
Difference . . .	0	02	09,4
Mean Rate of Chronometer of Tappanooly and Pulo Panjong in an interval of 5 days...			04,63
Difference of Longitude in Time between Tappanooly and Pulo Panjong	0	02	14,03
September 12, Chronometer Slow for Mean Time at Tappanooly	1	08	18,9
September 18, Chronometer Slow for Mean Time at Pulo Panjong	1	13	28
Difference . . .	0	02	09,8
Mean Rate of Chronometer of Tappanooly and Pulo Panjong in an interval of 6 days...			05,38
Difference of Longitude in Time between Tappanooly and Pulo Panjong	0	02	15,38

	h.	′	″
September 13, Chronometer Slow for Mean Time at Tappanooly	1	08	39,8
September 23, Chronometer Slow for Mean Time at Pulo Panjang	1	10	02,3
Difference ...	0	01	22,5
Mean Rate of Chronometer at Tappanooly and Pulo Panjang in an Interval of 10 days		00	01,3
Difference of Longitude in Time between Tappanooly and Pulo Panjang	0	00	17,2

Difference of Longitude between Tappanooly and Pulo Panjang.

Chronometer 397.

	h.	′	″
By 1st Set of Observations	0	00	36,03
2d "	0	00	23,28
3d "	0	00	21,19
Mean ..	0	00	21,50

Chronometer 397.

By 1st Set of Observations	0	00	11,03
2d "	0	00	15,28
3d "	0	00	17,2
Mean ..	0	00	13,14
Mean ..	0	00	17,32 Ans.

OBSERVATIONS

For the TIME and LONGITUDE of PULO PANJONG. (B.)

1681 Month.	Mean of Times per Chronometer 207.	Alterations Corrected for Error of Scales.	Direction.	Number.	True Altitude of the Sun's Centre.	Sun's Declination	Apparent Time.	Equation of Time.	Mean Time.	Chronometer Fast or Slow for Mean Time. 207 Slow.	203 Slow.	Excessive Slow.	Rate per Day. 207.	201.	Excessive.
	h. ′ ″	h. ′ ″			° ′ ″	° ′ ″	h. ′ ″	′ ″	h. ′ ″	h. ′ ″	h. ′ ″	h. ′ ″	″	″	″
Nov. 1	19 51 26,53	11 59 52,75			0	14 59 20,0	21 7 14,50	—16 15,01	19 51 59,01	1 9 15,72	2 3 0	0 43 58,3			
3	By the Equal Altitudes of the Sun								19 50 47,59	1 9 18,21	2 3 13,71	0 43 41,16	+0,85	−0,71	+11,51
6	By	"	"	"					19 50 49,36	1 9 10,88	2 3 10,05	0 43 13,72	0,76	10,86	9,76
10	By	"	"	"					19 50 51,61	1 9 8,38	2 3 13,76	0 43 5,66	0,55	11,15	11,51
13	By	"	"	"					19 50 51,80	1 9 8,19	2 3 13,19	0 43 14,16	0,17	11,81	14,66

Rate of the Chronometers at Pulo Panjong.

1681 Day of the Month.	Rate of Chronometers. 201.	207.	Excessive.	Remarks.
	″	″	″	
November 1 to 3	− 9,71	+ 0,89	+ 11,51	
6	10,09	0,79	9,76	
10	11,45	0,75	10,97	
13	11,81	0,19	11,69	
	40,06	1,61	43,93	
Mean . .	11,51	0,4	11,73	At Pulo Panjong.

At PULO TELLOOR.

For the Time, and Longitude.

1822 Month.	Time by Chronometer 287 Forenoon.	Altitude of the Sun corrected for Error, Refraction, &c.	Sun's Declination.	Latitude.	Apparent Time.	Equation of Time.	Mean Time.	Chronometer Slow or Fast by Mean Time. 287 Slow.	291 Slow.
	h. ′ ″	° ′ ″	° ′ ″	° ′ ″	h. ′ ″	′ ″	h. ′ ″	h. ′ ″	h. ′ ″
Sept. 19	7 41 50,2	14 38 43,8	1 46 03 s.	0 47 09 s.	8 58 40,3	5 59,5	9 52 43,8	1 10 41,5	1 55 59,5

Difference of Longitude between Pulo Panjong and Pulo Telloor.

Chronometer 287.

	h.	′	″
Sept. 19, Chronometer Slow for Mean Time at Pulo Telloor	1	10	41,5
19, Chronometer Slow for Mean Time at Pulo Panjong	1	20	27,3
Difference of Longitude in time between Pulo Panjong and Pulo Telloor	0	02	14,0

Chronometer 291.

	h.	′	″
Sept. 19, Chronometer Slow for Mean Time at Pulo Telloor	1	55	59,5
19, Chronometer Slow for Mean Time at Pulo Panjong	1	54	57,4
Difference of Longitude in Time between Pulo Panjong and Pulo Telloor	0	00	02,2

	h.	′	″
Difference of Longitude in Time by Chronometer 287	0	02	14,0
Difference of Longitude in Time by Chronometer 291.	0	00	02,1
Mean ..	0	00	18,05
Difference of Longitude in Degrees between Pulo Panjong and Pulo Telloor	0	02	13,1

At PULO PAHGAUGO.

For the Time, and Longitude.

1822 Month.	Time by Chronometer 287 Forenoon.	Altitude of the Sun corrected for Error, Refraction, &c.	Sun's Declination.	Latitude.	Apparent Time.	Equation of Time.	Mean Time.	Chronometer Slow or Fast by Mean Time. 287.	291.
	h. ′ ″	° ′ ″	° ′ ″	° ′ ″	h. ′ ″	′ ″	h. ′ ″	h. ′ ″	h. ′ ″
Sept. 22	8 29 13,7	37 29 00,8	0 14 45 s.	0 18 13 s.	9 49 56,1	7 23,8	9 42 27,3	1 10 17,4	1 55 15,1

Difference of Longitude between Pulo Panjong and Pulo Pahgaugo.

Chronometer 287.

	h.	′	″
Sept. 22, Chronometer Slow for Mean Time at Pulo Pahgaugo	1	10	17,4
22, Chronometer Slow for Mean Time at Pulo Panjong	1	20	24,8
Difference of Longitude in Time between Pulo Panjong and Pulo Pahgaugo	0	00	02,8

Chronometer 291.

	h.	′	″
Sept. 22, Chronometer Slow for Mean Time at Pulo Pahgaugo	1	55	15,5
22, Chronometer Slow for Mean Time at Pulo Panjong	1	55	24,7
Difference of Longitude in Time between Pulo Panjong and Pulo Pahgaugo	0	00	00,2

Difference of Longitude in Time by Chronometer 287			0 00 01,4
Difference of Longitude in Time by Chronometer 291			0 00 00,8
Mean			0 00 00,9
Difference of Longitude in degrees between Pole Punjung and Pole Pidgeings			0 00 05,3

Pole Punjung from Pole Tellicot, 20284 feet.

Triangles	Angles			Distances from the intermediate objects to	Feet.	Miles.
Pole Punjung	103	19	30	Pole Pidgeings	11892	2,26
Pole Tellicot	35	38	30		39606	7,502
Pole Pidgeings	50	02	00			
Pole Punjung	83	16	30	Ayer Bangky Hill	23718	4,492
Pole Tellicot	46	01	35		24088	4,562
Ayer Bangky Hill	50	42	55			
Pole Punjung	89	09	0	Lakwana Hill	23180	4,392
Pole Tellicot	39	16	0		29879	5,661
Lakwana Hill	50	34	0			
Pole Punjung	55	44	0	Goonum Allyer	30057	5,721
Pole Tellicot	83	34	15		37704	7,150
Goonum Allyer	41	01	45			
Pole Punjung	41	40	30	Mount Oykie	203274	38,498
Pole Tellicot	139	53	0		242662	45,959
Mount Oykie	3	07	30			
Pole Punjung	93	51	0	High Peak on the Range	170007	32,2
Pole Tellicot	75	21	0		174783	33,108
High Peak on the Range	59	38	0			

Pole Punjung from Lakwana Hill, 23180.

Pole Punjung	93	08	0	Ayer Bangky	23000	4,356
Lakwana Hill	30	09	45		23235	1,913
Ayer Bangky	76	24	00			

The Latitudes and Longitudes of Places on the West Coast of Sumatra about Aroa Bouley and the adjacent Islands as deduced from the Station at Pulo Penjang in Latitude 0° 11′ 28″ N. and Longitude 98° 47′ 10″ E.

Stations at	Names of Places.	Bearings reduced to the Meridian.	Distances given.	Distances on the Meridian	Distances on the Perpendicular.	Latitude.	Longitude from Pulo Penjang	Longitude from Greenwich.
		° ′ ″	feet.	feet.	feet.	° ′ ″	° ′ ″	° ′ ″
Pulo Penjang	Pulo Telloor . . .	33 38 30 s.e.	30184	24795 s.	17069 e.	0 07 35 s.	0 03 15 e.	99 50 25 e.
	Pulo Pulgunge . . .	68 37 30 s.w.	19862	6914	18600 w.	0 10 22	0 02 35 w.	99 13 58
	Ayer Bunghy Hill . .	89 09 30 s.e.	92218	285 s.	92215 e.	0 11 20	0 03 51 e.	99 21 38
	Lahoom Hill . . .	60 02 05	82350	41660	70937	0 23 18	0 08 12	99 30 20
	Gunung Allyee . . .	66 41 05	30857	11975	27774	0 12 51	0 04 24	99 21 44
	Mount Ophir . . .	81 27 00 s.e.	868874	136000 s.	857849	2 08 30	0 43 03	100 00 25
	High Pk. on the Range	88 04 05 s.e.	1762917	111592 s.	1750458	0 59 48	0 21 08	99 38 36
	Ayer Bunghy . . .	55 00 05	92855	9080	92501	0 13 42	0 03 43	99 21 25

Latitudes of Naval Station.

1819 Month.	Stars Observed.	Meridian Altitudes.	Reflection.	Mean Declination.	True Meridian Altitude.	Zenith Distance.	True Declination.	Latitude North.
		° ′ ″		° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
Oct. 9	ν Pavonis . .	34 09 30,1 s.	1 38,6	57 17 49,6 s.	58 07 57,5 s.	31 52 02,5 n.	31 47 49,6 n.	0 24 15,9
	γ Cygni . .	59 33 28 s.	0 40,2	29 41 23,2 s.	30 10 03,8 s.	59 49 56,2 s.	29 41 23,2 s.	0 23 37,1
	ε Cygni . .	45 33 45	0 35,8	*	45 52 19,8	44 07 40,8	44 39 11,9	0 27 11,7
	β Ursæ . .	51 14 48 s.	0 43,5	28 11 28,5 s.	51 13 54,5 s.	38 46 05,5 n.	38 11 28,5 s.	0 24 26,0
	α Ursæ . .	41 29 42,5	1 03,7	47 46 44,3	41 37 28,9	48 22 31,0	47 45 43,3	0 23 28,9
	β Ursæ . .	41 29 45	1 03,7	47 46 39,8	41 37 41,3	48 22 18,7	47 45 57,8	0 23 43,9
	η Pegasi . .	61 15 03 s.	0 21,5	29 17 41,5 s.	61 14 28,5 s.	28 45 31,5 n.	29 17 41,8 s.	0 23 13,9
	Fomalhaut . .	29 34 15 s.	0 28,1	* s.	30 58 25,9 s.	59 01 38,1 n.	30 33 05,1 s.	0 23 34,9
	β Pegasi . .	63 35 41,5 s.	0 29,5	27 27 50,5 s.	63 05 12,5 s.	26 54 48,5 n.	27 27 05,5 s.	0 23 22,9
	α Andromedæ . .	59 27 15	0 29,6	*	62 05 43,6	27 54 16,4	28 00 18,6	0 23 45,0
	α Piscium . .	46 11 27,5 s.	0 34,6	8 13 07,8 s.	46 10 48,8 s.	43 49 17,1 n.	43 15 27,9 s.	0 23 40,8

The Asterisks in the Column of "Mean Declination" are placed to show that the Declinations were taken from the Nautical Almanac, being then recorded for Nineteen and Aldebaran.

Results of the Observations
For the Latitudes of Naval Station.

By the Northern Stars.	° ′ ″	By the Southern Stars.	° ′ ″
γ Cygni . . .	0 23 37,1 n.	α Pavonis . . .	0 24 16,8 n.
ε Cygni . . .	0 27 11,7	γ Ursæ . . .	0 24 26,0
η Pegasi . . .	0 23 13,9	α Ursæ . . .	0 23 28,9
β Pegasi . . .	0 23 22,9	β Ursæ . . .	0 23 43,9
α Andromedæ . . .	0 23 45	Fomalhaut . . .	0 23 34,9
		α Piscium . . .	0 23 40,8
Mean	0 23 49,9	Mean	0 23 46,8

Latitude of Naval Station by the Northern Stars . .		0 23 49,9 n.
Do. do. by the Southern Stars . .		0 23 46,8
	Mean . .	0 23 48,4 n.

At Natal Station.

For the Time, and Longitude. (L.)

1822 Month.	Times by Chronometer 397. Forenoon.	Afternoon.	Mean.	Equation of Equal Altitudes.	Apparent Noon by Chronometer 397.	Equation of Time.	Mean Noon Chronometer 397.	Chronometers Slow or Fast for Mean Time. 397 Slow.	391 Slow.	Earnshaw.
	h. ′ ″	h. ′ ″	h. ′ ″	″	h. ′ ″	′ ″	h. ′ ″	h. ′ ″	h. ′ ″	h. ′ ″
Oct. 9	8 06 10,3	1 19 01,0	10 38 05,9	+ 1,2	10 38 07,1	+ 12 39,4	10 50 27,5	1 09 22,5	1 57 23,5	0 53 19

OBSERVATIONS

For the TIME and LONGITUDE of NATAL. (R.)

1822 Month.	Mean Times per Chronometer 397.	Altitudes Corrected for Error of Sextant.	Deflection.	Parallax.	True Altitude of the Sun's Centre.	Sun's Declination.	Apparent Time.	Equation of Time.	Mean Time.	Chronometers Slow or Fast for Mean Time. 397.	391.	Earnshaw.	Rate per Day. 397.	391.	Earnshaw.
	h. ′ ″	° ′ ″	″	+ ″	° ′ ″	° ′ ″	h. ′ ″	′ ″	h. ′ ″	h. ′ ″			″	″	″
Dec. 1	By Equal Altitudes of the Sun								20 51 47,3	1 8 12,6	—	—			
2	21 18 17,5	63 59 37,5	29	4	63 59 13,5	22 2 43,2	23 6 46,68	−10 9,92	22 56 30,7	1 8 13,22	—	—	+0,61	—	—
1813	Earnshaw.														
March 21	2 13 0,65	63 0 0,38	33	4,25	59 59 31,36	2 19 30,1	1 59 51,35	+ 5 43,21	2 5 34,70	—	4 18 25,68	0 4 50,99			
22	2 9 58,43	63 0 0,36	33	4	59 59 31,3	2 43 4,7	1 59 43,55	5 28,1	2 5 9,61	—	4 18 56,9	0 4 58,82	—	−29,29	+27,51
23	21 38 29,8	51 59 45	45	3,75	51 59 5,35	3 2 3,2	21 28 11,67	5 9,36	21 33 20,83	—	4 22 29	0 5 2	—	Stopt.	13,18

AT NATAL.

Difference of Longitude from Pulo Panjong.

Chronometer 291.

		h.	′	″
1822. Dec. 9,	Mean Noon at Natal Chronometer Slow	9	8	10,0
3,	" at " "	9	9	20,0

Chronometer 297.

December 9,	Mean Noon at Natal Chronometer Slow	1	8	12,0
3,	" at " "	1	8	13,0

Chronometer Earnshaw.

December 9,	Mean Noon at Natal Chronometer Slow	0	42	2,0
3,	" at " " "	0	41	33,0

Rate of the Chronometers.

	294	297	Earnshaw.	
	86,39	+ 1,02	46,34	At Pulo Panjong.
	10,11	— 0,84	10,30	At Natal.
4 Days.	50,00	0,97	57,39	
Mean Rate.	11,28	+ 0,19	+ 11,61	Pulo Panjong and Natal.

Difference of Longitude between Pulo Panjong, and Natal Station, (L.)

Chronometer 297.

	h.	′	″
Sept. 28, Chronometer Slow for Mean Time at Pulo Panjong	1	10	16,5
October 9, Chronometer Slow for Mean Time at Natal	1	09	22,5
Difference ..	0	00	54,0
Mean Rate of Chronometer at Pulo Panjong in an interval of 11 days...	0	00	30,3
Difference of Longitude in Time between Pulo Panjong and Natal	0	01	00,2

Chronometer 291.

September 28, Chronometer Slow for Mean Time at Pulo Panjong	1	59	15,5
October 9, Chronometer Slow for Mean Time at Natal.	1	57	55,5
Difference ..	0	01	25,0
Mean Rate of Chronometer at Pulo Panjong in an interval of 11 days...	0	01	30,0
Difference of Longitude in Time between Pulo Panjong and Natal	0	00	56

Chronometer Earnshaw.

September 28, Chronometer Slow for Mean Time at Pulo Panjong	0	57	45,5
October 9, Chronometer Slow for Mean Time at Natal	0	53	19,0
Difference ..	0	04	26,5
Mean Rate of Chronometer at Pulo Panjong in an interval of 11 days...	0	03	33,95
Difference of Longitude in Time between Pulo Panjong and Natal		00	52,50

For the Longitude of Natal Station.

Chronometer 197.

	h.	′	″
October 9, Mean Noon at Natal Chronometer Slow	1	09	22,5

Chronometer 201.

October 9, Mean Noon at Natal Chronometer Slow.	1	57	23,5

Rate of the Chronometers at Pulo Panjong. (2d Time.)

1872	Rate of Chronometers.			Remarks.
Month.	197.	201.	Earnshaw.	
	″	″	″	
October 19	+ 02,5	— 13,5	+ 17,5	
20	31,8	93,8	143,8	10 Days.
30	60,7	17,2	11,7	
31				
Mean . .	03,0	10,25	14,41	

Chronometer 197.

	h.	′	″
October 19, Mean Noon at Pulo Panjong Chronometer Slow	1	09	51,9

Chronometer 201.

October 19, Mean Noon at Pulo Panjong Chronometer Slow	0	0	55,9

Difference of Longitude between Pulo Panjong and Natal. (2d Time.)

Chronometer 197.

	h.	′	″
October 9, Chronometer Slow for Mean Time at Natal	1	09	22,5
October 19, Chronometer Slow for Mean Time at Pulo Panjong	1	09	51,9
Difference . . .	0	00	29,4
Mean Rate of Chronometer at Pulo Panjong in an interval of 10 days.			29,4
Difference of Longitude in Time between Pulo Panjong and Natal.	0	00	29,4

Chronometer 201.

October 9, Chronometer Slow for Mean Time at Natal	1	57	23,5
October 19, Chronometer Slow for Mean Time at Pulo Panjong	0	00	55,9
Difference . . .	0	03	00,4
Mean Rate of Chronometer at Pulo Panjong in an interval of 10 days		01	42,5
Difference of Longitude in Time between Pulo Panjong and Natal	0	01	42,5

Chronometer Earnshaw.

	h.	′	″
October 9, Chronometer Slow for Mean Time at Natal	0	33	19,0
October 19, Chronometer Slow for Mean Time at Pulo Panjong	0	32	16,9
Difference ...	0	01	09,1
Mean Rate of Chronometer at Pulo Panjong in an interval of 19 days	0	02	24,1
Difference of Longitude in Time between Pulo Panjong and Natal	0	01	23,3

Difference of Longitude from Pulo Panjong. (R.)

Chronometer 394.

1862. December 9, Chronometer Slow for Mean Time at Natal	2	8	20,6
November 19, Chronometer Slow for Mean Time at Pulo Panjong	2	5	25,19
Difference ...	0	2	35,41
Mean Rate of Chronometer at Pulo Panjong and Natal in an interval of 19 days ...	0	3	36,29
Difference of Longitude in time between Pulo Panjong and Natal	0	0	40,83

December 3, Chronometer Slow for Mean Time at Natal	2	8	37,24
November 13, Chronometer Slow for Mean Time at Pulo Panjong	2	5	21,79
Difference ...	0	3	6,65
Mean Rate of Chronometer at Pulo Panjong and Natal in an interval of 20 days ...	0	3	46,8
Difference of Longitude in Time between Pulo Panjong and Natal	0	0	60,55

Chronometer 397.

	h.	′	″
December 9, Chronometer Slow for Mean Time at Natal	1	8	12,8
November 13, Chronometer Slow for Mean Time at Pulo Panjong	1	9	8,19
Difference ...	0	0	53,19
Mean Rate of Chronometer at Pulo Panjong and Natal in an interval of 19 days ...	0	0	3,61
Difference of Longitude in Time between Pulo Panjong and Natal	0	0	51,98

December 3, Chronometer Slow for Mean Time at Natal	1	8	13,24
November 13, Chronometer Slow for Mean Time at Pulo Panjong	1	9	8,19
Difference ...	0	0	54,93
Mean Rate of Chronometer at Pulo Panjong and Natal in an interval of 20 days ...	0	0	3,8
Difference of Longitude in Time between Pulo Panjong and Natal	0	0	51,15

Chronometer Earnshaw.

	h.	′	″
December 9, Chronometer Slow for Mean Time at Natal	0	48	5,6
November 13, Chronometer Slow for Mean Time at Pulo Panjong	0	48	34,19
Difference ...	0	4	43,36
Mean Rate of Chronometer at Pulo Panjong and Natal in an interval of 19 days ...	0	3	37,74
Difference of Longitude in Time between Pulo Panjong and Natal	0	1	10,80

	h.	′	″
December 3, Chronometer Slow for Mean Time at Natal	0	51	51,84
November 12, Chronometer Slow for Mean Time at Pulo Penjang	0	46	54,15
Difference	0	4	56,69
Mean Rate of Chronometer at Pulo Penjang and Natal in an interval of 10 days	0	2	48
Difference of Longitude in Time between Pulo Penjang and Natal	0	1	8,34

Difference of Longitude between Pulo Penjang and Natal. (L.)

Chronometer 207.

	h.	′	″
By 1st Set of Observations	0	1	01,8
2d "	0	0	57,4
Mean	0	1	0,8

Chronometer 201.

By 1st Set of Observations	0	0	16
2d "	0	1	02
Mean	0	0	49,5

Chronometer Earnshaw.

By 1st Set of Observations	0	0	37,35
2d "	0	1	37
Mean	0	1	37,5
Mean	0	0	58,5

Difference of Longitude between Pulo Penjang and Natal. (R.)

Chronometer 201.

By 1st Set of Observations	0	0	40,01
2d "	0	0	40,15
Mean	0	0	40,08

Chronometer 207.

By 1st Set of Observations	0	0	51,98
2d "	0	0	51,55
Mean	0	0	51,76
Mean	0	0	46,18

At NATAL HILL.

For the Time and Longitude.

1822 Month.	Watch by Chronometer 201 Fahrenheit.	Altitude of the Sun corrected for Error, Refraction, &c.	Sun's Declination.	Latitude.	Apparent Time.	Equation of Time.	Mean Time.	Chronometer Slow on Part at Mean Time. 207 Slow.
	h. ′ ″	° ′ ″	° ′ ″	° ′ ″	h. ′ ″	″	h. ′ ″	h. ′ ″
Oct. 10	7 47 43,5	46 58 48,5	S 34 49 0	S 29 49 0	8 29 20,1	28 44,478	8 27 07,2	1 09 57,5

Difference of Longitude between Pulo Penang and Natal Hill.

Chronometer 393.

	h.	′	″
October 13, Chronometer Slow for Mean Time at Natal Hill	3	08	07,8
October 19, Chronometer Slow for Mean Time at Pulo Penjang	3	09	51,9
Difference	0	01	14,1
Mean Rate of Chronometer at Pulo Penjang in an Interval of 6 days			17,7
Difference of Longitude in Time between Pulo Penjang and Natal	0	00	46,1

At AYER BONGHY (Near the Flag Staff.)

For the Time and Longitude.

1822 Month.	Time by Chronometer 393. Afternoon.	Altitude of the Sun's nearest Limb. Observed by Mr. Elliott, &c.	Sun's Declination.	Latitude.	Apparent Time.	Equation of Time.	Mean Time.	Chronometer Slow on Mean Time. 393 Slow.
	h. ′ ″	° ′ ″	° ′ ″	° ′ ″	h. ′ ″	″	h. ′ ″	h. ′ ″
Oct. 16	1 26 51,5	43 39 55	S 8 48 20	9 11 41,6	3 31 26,4	14 18,4	3 47 03,8	3 19 13,3

Difference of Longitude between Pulo Penang and Ayer Bonghy.

Chronometer 393.

	h.	′	″
Oct. 18, Chronometer Slow for Mean Time at Ayer Bonghy	3	19	13,5
Oct. 16, Chronometer Slow for Mean Time at Pulo-Penjang	3	09	59,4
Difference of Longitude in Time between Pulo Penjang and Ayer Bonghy	0	09	18,1

Latitude of Pulo Penang.

By the Stars.

1822 Month.	Stars Observed.	Meridian Altitude.	Reduction.	Mean Declination.	True Meridian Altitude.	Zenith Distance.	True Declination.	Latitude North.
		° ′ ″	′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
Dec. 12	Achernar ...	33 45 12 s	1 21,8	58 09 19,7 s	31 46 57,4 s	58 13 19,6 n	58 09 16,2 s	0 03 00,8
	β Pavon ...	49 41 41 s	0 48,9	69 35 05,1 s	19 48 53,8 s	40 11 06,2 s	69 36 06,1 s	0 04 59,9
13	Achernar ...	31 45 12,1 s	1 21,8	58 09 19,8 s	31 46 40,7 s	58 13 19,3 n	58 09 16,4 s	0 03 00,8
	α Arodis ...	62 29 01 s	0 03,5	*	27 27 41,5 n	62 32 18,5 s	62 27 22,4 s	0 04 17,8
15	Achernar ...	31 44 17,5 s	1 21,8	58 09 19,8 s	31 46 48,7 s	58 13 14,3 n	58 09 16,4 s	0 04 55,8
	β Pavon ...	49 53 07,5 s	0 49,1	69 35 01,8 s	19 58 30,3 s	69 37 26,7 s	69 33 31,0 s	0 03 53,8

Latitude—By the Sun.

1822 Month.	Sun Observed.	Meridian Altitude.	Reduction.	Parallax.	Sun's Semi-Diameter.	True Meridian Altitude of Sun's Centre.	Zenith Distance.	Declination.	Latitude North.
		° ′ ″	′ ″	″	′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
Dec. 13	Sun's L. L.	69 13 [illegible]	[illegible]	[illegible]	[illegible]	69 59 47,8 s	69 59 11,8 n	69 35 33,0 s	0 23 39,0
15	Sun's L. L.	68 11 [illegible]	[illegible]	[illegible]	[illegible]	68 59 33,8	68 58 00,1	69 21 51,6	0 23 39,5

Results of the Observations
For the Latitude of Pulo Pinnee.

By the Northern Stars.	° ′ ″	*By the Southern Stars.*	° ′ ″
γ Persei	0 04 59,9 N	Achernar	0 05 00,9 N
α Arietis	0 05 12,9		0 05 00,9
α Persei	0 05 23,2		0 04 55,9
		Sun	0 04 19,0
			0 04 28,5
Mean	0 05 12,0 N	Mean	0 04 45,0 N

Latitude of Pulo Pinnee by the Northern Stars	0 05 12,0 N
do. do. by the Southern Stars . . .	0 04 45,0
Mean . .	0 04 58,5 N

Results of the Observations

At Pulo Pinnee,

For the True Bearing *of* Pulo Gaunsah Lout, *and the* Variation *of the* Compass.

Month.	Apparent Time.	Horary Angle.	Dist. Sun's So. Limb & Gaunsah Lout, corrected for Error and S. Diam.	Azimuth.	Horizontal Arc.	True Bearing.	Magnetic Bearing.	Variation of the Compass.
	h. ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
Dec. 19	5 55 15	88 48 45	124 16 42	66 34 56	55 42 33	57 42 33 SE	59 09 0	1 26 29
20	5 57 10	89 17 30	124 04 57	66 33 48	55 54 39	57 31 37	59 09	1 37 23
					Mean. . . .	57 37 04 SE		1 31 56 N

RESULTS OF THE OBSERVATIONS

At Peth Pevran.

For the Time, Longitude and Rates of the Chronometers (L.)

1819 Month.	Times by Chronometer Earnshaw. Forenoon.	Afternoon.	Mean.	Correction applied. Alt.	Apparent Noon by Chronometer Earnshaw.	Equation of Time.	Mean Noon by Chronometer Earnshaw.	Chronometers Slow on Time of Mean Time. Earnshaw Slow.	397 Slow.	Rate per Day. Earnshaw.	397.
	h. ' "	h. ' "	h. ' "	"	h. ' "	' "	h. ' "	h. ' "	h. ' "	"	"
Nov. 14	0 04 43,8	1 07 45,8	11 38 13,3	+ 1,1	11 39 14,4	S 18,3	11 51 29,8	0 08 27,3	0 09 30,3		
15	0 03 38,9	1 06 19,5	11 36 58,9	0,0	11 37 00,1	4 40,2	11 41 40,9	0 08 30,9	0 09 44,9	+ 13,7	— 09,3
	Chronometer 201.				Chronometer 201.		Chronometer 201.			13,9	13,1
19	7 17 19,8	11 13 19,7	9 05 07,7	0,8	9 05 08,6	S 21,3	9 05 14,7	0 07 05,3	0 10 43,3		
20	7 20 14,9	11 17 08,8	9 04 40,1	0,8	9 04 40,9	9 21,7	9 05 05,1	0 07 05,9	0 10 39,5	13,8	11,2

OBSERVATIONS

For the Time and Longitude of Peth Pevran. (E.)

1819 Month.	Mean Times per Chronometer for 397.	Altitudes Corrected for Error of Sextant.	Reflection.	Parallax.	True Altitude of the Sun's Centre.	Sun's Declination.	Apparent Noon.	Equation of Time.	Mean Time.	Chronometers Slow on True or Mean Time. 397 Slow.	201.	Earnshaw Slow.	Rate per Day. 397.	201.	Earnshaw.
	h. ' "	° ' "	'	"	° ' "	° ' "	h. ' "	' "	h. ' "	h. ' "	h. ' "	h. ' "	"	"	"
Nov. 9	1 01 19	42 28 37,0	0,8	0	49 28 53,0	22 48 4,2	0 12 3,01	−7 25,19	0 7 20,01	1 7 11,09	0 8 43,01	0 28 48,71			
10	By Equal Altitudes								Noon.	1 7 9,08	0 8 38,09	0 28 50,04	+0,15	−0,87	+14,75
"	19 58 58	42 59 37,3	0,8	0,5	43 00 44	22 55 10,1	0 11 36,03	− 8 44,37	0 2 51,66	1 7 0,81	—	—	3,00	—	—
	Earnshaw.														
11	20 00 34,3	50 59 37,3	0,8	0,7	43 00 55,13	23 2 9,8	0 11 1,58,1	6 19,7	0 10 53 20,7	—	—	0 29 3,9	—	—	14,79
12	0 00 44,10	50 59 37,3	0,8	0,7	50 59 31,8	23 8 47,5	0 11 1,58,5	5 43,8	0 11 1 20,6	—	—	0 29 46,91	—	—	15,68
13	1 47 44,3	44 59 37,3	0,8	0,5	45 00 19,5	23 15 41,8	0 11 1,58,8	5 15,9	0 11 1 11,8	—	—	0 30 47,1	—	—	16,41
"	19 58 58,75	44 59 37,3	0,8	0,5	44 59 47	23 15 99,3	0 11 1,59,3	4 48,3	0 11 1 07,8	—	—	0 30 11,61	—	—	16,79
15	20 00 37,3	43 59 00	0,8	0,5	43 59 18,9	23 22 17,8	0 11 1,58,5	4 21,03	0 11 1 03,67	—	—	0 31 01,80	—	—	17,55
16	20 02 34	42 59 00	0,8	0,5	42 59 41,9	23 28 54,2	0 11 1,58,2	3 53,29	0 11 1 04,49	—	—	0 31 19,49	—	—	8,71
20	21 5 8,3	40 59 07,3	0,8	0,4	39 59 43,3	23 47 55,3	0 11 1,58,3	1 54,1	0 11 1 01,6	—	—	0 31 09,6			

For the Longitude of Pulo Penang.

Chronometer 201 at Pulo Penjang.

	h.	′	″
November 17, Mean Noon at Pulo Penjang Chronometer Slow	0	09	09,9

Chronometer Earnshaw.

November 17, Mean Noon at Pulo Penjang Chronometer Slow	0	45	09,9

Rate of the Chronometers at Pulo Penang.

1799	Rate of Chronometers.		Remarks.
Month.	201.	Earnshaw.	
	″	″	
November 10	— 10,3	+ 17,1	
12	11,1	06,8	
14	11,1	17,6	7 days.
16	10,3	19	
17			
	11,0	11,3	Mean.

Chronometer 201.

					h.	′	″
December 14, Mean Noon at Pulo Pinang Chronometer Slow					0	09	20,5
16,	"	"	"	"	0	09	44,8
18,	"	"	"	"	0	10	45,9

Chronometer Earnshaw.

December 14, Mean Noon at Pulo Pinang Chronometer Slow					0	28	37,5
15,	"	"	"	"	0	28	31,8
18,	"	"	"	"	0	27	21,5

Rate of the Chronometers at Pulo Pinang.

1799	Rate of Chronometers.		Remarks.
Month.	201.	Earnshaw.	
	″	″	
December 14	— 09,3	+ 16,7	
15	09,5	17,5	
17	11,8	12,8	
20			
	12,2	13,0	Mean at Pulo Pinang.
	11,0	11,3	Mean at Pulo Penjang.
	10,49	10,65	Mean Rate.

At South East Point of Pulo Pinnee.

Difference of Longitude from Natal.

Chronometer 291.

		h.	′	″
December 9,	Mean Noon at Pulo Pinnee Chronometer Slow	2	8	43,91
10,	" at " "	2	8	54,28

Chronometer 297.

December 9,	Mean Noon at Pulo Pinnee Chronometer Slow	1	7	11,21
10,	" at " " "	1	7	9,08
11,	" at " " "	1	7	6,00

Chronometer Eutrabaw.

December 9,	Mean Noon at Pulo Pinnee Chronometer Slow	0	29	44,00
10,	" at " " "	0	29	30,08

Rate of the Chronometers at Pulo Pinnee.

1822	Rate of Chronometers.			Remarks.
Month.	291	297	Eutrabaw.	
	″	″	″	
Dec. 9 to 10	— 8,87	+ 2,12	+ 14,88	
11	8,87	3,02	14,88	
	8,87	5,14	14,88	At Pulo Pinnee.
	35,9	0,57	47,38	Sum.
	8 (35,77	7 (5,71	8 (74,88	
Mean Rate.	10,96	+ 0,87	+ 12,83	From Natal to Pulo Pinnee.

Difference of Longitude between Pulo Panjong and Pulo Pinnee. (L.)

Chronometer 291.

		h.	′	″
1822.	November 17, Chronometer Slow for Mean Time at Pulo Panjong	2	00	08,9
	December 14, Chronometer Slow for Mean Time at Pulo Pinnee	2	09	35,5
	Difference . .	0	03	07,6
	Mean Rate of Chronometer at Pulo Panjong and Pulo Pinnee in an interval of 27 days. .	0	05	29,05
	Difference of Longitude in Time between Pulo Panjong and Pulo Pinnee	0	08	03,43

	November 17, Chronometer Slow for Mean Time at Pulo Panjong	2	00	08,9
	December 15, Chronometer Slow for Mean Time at Pulo Pinnee	2	03	44,8
	Difference . .	0	03	35,9
	Mean Rate of Chronometer at Pulo Panjong and Pulo Pinnee in an interval of 28 days. .	0	05	40,2
	Difference of Longitude in Time between Pulo Panjong and Pulo Pinnee	0	08	04,3

	h.	′	″
November 17, Chronometer Slow for Mean Time at Pulo Panjong	2	06	09,9
December 18, Chronometer Slow for Mean Time at Pulo Pinnee	2	10	45,3
Difference . .	0	04	35,4
Mean Rate of Chronometer at Pulo Panjong and Pulo Pinnee in an interval of 31 days . .	0	00	29,9
Difference of Longitude in Time between Pulo Panjong and Pulo Pinnee	0	01	50,4

Chronometer Earnshaw.

November 17, Chronometer Slow for Mean Time at Pulo Panjong	0	46	08,9
December 14, Chronometer Slow for Mean Time at Pulo Pinnee	0	28	27,5
Difference . . .	0	07	41,4
Mean Rate of Chronometer at Pulo Panjong and Pulo Pinnee in an interval of 27 days . .	0	05	41,5
Difference of Longitude in Time between Pulo Panjong and Pulo Pinnee	0	01	59,8

November 17, Chronometer Slow for Mean Time at Pulo Panjong	0	46	08,9
December 15, Chronometer Slow for Mean Time at Pulo Pinnee	0	28	10,8
Difference . . .	0	07	58,1
Mean Rate of Chronometer at Pulo Panjong and Pulo Pinnee in an interval of 28 days . .	0	05	54,9
Difference of Longitude in Time between Pulo Panjong and Pulo Pinnee	0	02	03,2

November 17, Chronometer Slow for Mean Time at Pulo Panjong	0	46	08,9
December 18, Chronometer Slow for Mean Time at Pulo Pinnee	0	27	22,3
Difference . . .	0	18	45,6
Mean Rate of Chronometer at Pulo Panjong and Pulo Pinnee in an interval of 32 days . .	0	06	48,8
Difference of Longitude in Time between Pulo Panjong and Pulo Pinnee	0	02	00,8

Difference of Longitude from Natal. (R.)

Chronometer 395.

	h.	′	″
1872. Dec. 9, Chronometer Slow for Mean Time at Pulo Pinnee	2	8	45,21
Dec. 2, Chronometer Slow for Mean Time at Natal	2	8	31,84
Difference . . .	0	0	13,37
Mean Rate of Chronometer at Natal and Pulo Pinnee in an interval of 6 days	0	1	3,76
Difference of Longitude in Time between Natal and Pulo Pinnee	0	0	51,72

December 10, Chronometer Slow for Mean Time at Pulo Pinnee	2	8	24,08
December 8, Chronometer Slow for Mean Time at Natal	2	8	21,91
Difference . . .	0	0	22,84
Mean Rate of Chronometer at Natal and Pulo Pinnee in an interval of 7 days	0	1	16,72
Difference of Longitude in Time between Natal and Pulo Pinnee	0	0	53,88

Chronometer 292.

	h.	′	″
December 9, Chronometer Slow for Mean Time at Pulo Pinnee	1	7	11,91
December 3, Chronometer Slow for Mean Time at Natal	1	8	17,84
Difference	0	1	2,03
Mean Rate of Chronometer at Natal and Pulo Pinnee in an interval of 6 days	0	0	5,22
Difference of Longitude in Time between Natal and Pulo Pinnee	0	0	58,81

December 10, Chronometer Slow for Mean Time at Pulo Pinnee	1	7	9,08
December 3, Chronometer Slow for Mean Time at Natal	1	8	13,25
Difference	0	1	4,15
Mean Rate of Chronometer at Natal and Pulo Pinnee in an interval of 7 days	0	0	6,09
Difference of Longitude in Time between Natal and Pulo Pinnee	0	0	58,07

December 10, Chronometer Slow for Mean Time at Pulo Pinnee	1	7	9,08
December 3, Chronometer Slow for Mean Time at Natal	1	8	13,24
Difference	0	1	7,15
Mean Rate of Chronometer at Natal and Pulo Pinnee in an interval of 8 days	0	0	6,06
Difference of Longitude in Time between Natal and Pulo Pinnee	0	1	0,99

Chronometer Earnshaw.

December 9, Chronometer Slow for Mean Time at Pulo Pinnee	0	29	44,02
December 3, Chronometer Slow for Mean Time at Natal	0	41	55,28
Difference	0	2	10,28
Mean Rate of Chronometer at Natal and Pulo Pinnee in an interval of 6 days	0	1	52,18
Difference of Longitude in Time between Natal and Pulo Pinnee	0	0	58,1[illegible]

December 10, Chronometer Slow for Mean Time at Pulo Pinnee	0	29	53,00
December 3, Chronometer Slow for Mean Time at Natal	0	41	55,28
Difference	0	2	23,16
Mean Rate of the Chronometer at Natal and Pulo Pinnee in an interval of 8 days	0	1	52,21
Difference of Longitude in Time between Pulo Penjong and Pulo Tellour	0	1	00,[illegible]

Difference of Longitude between Pulo Penjong and Pulo Pinnee. (h.)

Chronometer 291.

	h.	′	″
By 1st Set of Observations	0	02	00,43
2d "	0	02	01,2
3d "	0	01	52,4
Mean	0	1	58,06

Chronometer Earnshaw.

By 1st Set of Observations	0	0	59,83
2d "	0	02	03,9
3d "	0	02	00,8
Mean	0	2	1,52
Mean	0	1	0,295 West.

Difference of Longitude between Natal and Pulo Pinnee. (R.)

Chronometer 396.

	h.	′	″
By 1st Set of Observations	0	0	51,79
2d "	0	0	53,98
Mean ..	0	0	52,85

Chronometer 397.

	h.	′	″
By 1st Set of Observations	0	0	55,81
2d "	0	0	58,07
3d "	0	1	0,22
Mean ..	0	0	58,36

Chronometer Earnshaw.

	h.	′	″
By 1st Set of Observations	0	0	58,1
2d "	0	1	0,95
Mean ..	0	0	59,52
Mean ..	0	0	59,9

For the Longitude of Pulo Gaussan Lout. (L.)

Chronometer Earnshaw.

	h.	′	″
December 23, Mean Noon at Pulo Pinnee Chronometer Slow	0	37	69,3

Rates of the Chronometer at Pulo Gaussan Lout.

1872 Month.	Earnshaw.	Remarks.
December 24		
25	+ 15,3	
26	15,9	
27	15,8	
	15,37	Mean at Pulo Gaussah Lout.
	15,0	Mean at Pulo Pinnee.
	15,185	Mean Rate.

Chronometer Earnshaw.

	h.	′	″
December 24, Mean Noon at Pulo Gaussah Lout Chronometer Slow	0	36	26,0
25, " at " " "	0	36	16,0
26, " at " " "	0	36	69,0

Difference of Longitude between Pulo Pinang and Pulo Gaunah Lont. (L.)

Chronometer Earnshaw.

	h.	′	″
Dec. 19, Chronometer Slow for Mean Time at Pulo Pinang	0	27	09,5
Dec. 24, Chronometer Slow for Mean Time at Pulo Gaunah Lont	0	26	26,0
Difference ...	0	0	43,5
Mean Rate of Chronometer at Pulo Pinang & Pulo Gaunah Lont in an interval of 4 days..	0	0	10,74
Difference of Longitude in Time between Pulo Pinang and Pulo Gaunah Lont.	0	0	09,16

Dec. 27, Chronometer Slow for Mean Time at Pulo Pinang	0	27	09,5
Dec. 31, Chronometer Slow for Mean Time at Pulo Gaunah Lont	0	26	32,5
Difference ...	0	0	56,0
Mean Rate of Chronometer at Pulo Pinang & Pulo Gaunah Lont in an interval of 7 days..	0	1	08,00
Difference of Longitude in Time between Pulo Pinang and Pulo Gaunah Lont... ...	0	0	09,33

Dec. 28, Chronometer Slow for Mean Time at Pulo Pinang	0	27	09,5
Dec. 30, Chronometer Slow for Mean Time at Pulo Gaunah Lont...	0	26	02
Difference ...	0	1	07,5
Mean Rate of Chronometer at Pulo Pinang & Pulo Gaunah Lont in an interval of 6 days..	0	1	15,11
Difference of Longitude in Time between Pulo Pinang and Pulo Gaunah Lont... ...	0	0	11,81

Chronometer Earnshaw.

					h.	′	″
Difference of Longitude in Time	By 1st Set of Observations				0	0	09,16
"	"	2d	...	...	0	0	09,33
"	"	3d	...	...	0	0	11,81
				Mean ..	0	0	10,10

Difference of Longitude between Pulo Pinang and Pulo Gaunah Lont. (R.)

Chronometer Earnshaw.

							h.	′	″
December 27, Mean Noon at Pulo Gaunah Lont Chronometer Slow							0	26	39,41
29,	"	at	"	"	"	...	0	26	47,4
31,	"	at	"	"	"	...	0	26	54,37

1827 Month.	Rate of Chronometer.	Remarks.
Dec. 27 to 29	+ 7,93	
29	11,81	
	19,74	
	9,87	At Pulo Gaunah Lont.
	14,08	At Pulo Pinang.
Mean Rate	+ 11,98	Gaunah Lont and Pulo Pinang.

Difference of Longitude from Pulo Pinnee. (R.)

Chronometer Earnshaw.

	h.	′	″
1822. December 23, Chronometer Slow for Mean Time at Pulo Gaunsah Lout . . .	0	36	33,41
December 21, Chronometer Slow for Mean Time at Pulo Pinnee	0	37	00,58
Difference . . .	0	0	27,14
Mean Rate of Chronometer at Pulo Pinnee and Pulo Gaunsah Lout in an interval of 2 days	0	0	20,66
Difference of Longitude in Time between Pulo Pinnee and Pulo Gaunsah Lout	0	0	6,48

December 24, Chronometer Slow for Mean Time at Pulo Gaunsah Lout	0	36	25,4
December 21, Chronometer Slow for Mean Time at Pulo Pinnee	0	37	00,55
Difference . . .	0	0	35,18
Mean Rate of Chronometer at Pulo Pinnee and Pulo Gaunsah Lout in an interval of 3 days	0	0	31,06
Difference of Longitude in Time between Pulo Pinnee and Pulo Gaunsah Lout . . .	0	0	4,12

December 25, Chronometer Slow for Mean Time at Pulo Gaunsah Lout	0	36	14,20
December 21, Chronometer Slow for Mean Time at Pulo Pinnee	0	37	00,55
Difference . . .	0	0	46,42
Mean Rate of Chronometer at Pulo Pinnee and Pulo Gaunsah Lout in an interval of 4 days	0	0	41,30
Difference of Longitude in Time between Pulo Pinnee and Pulo Gaunsah Lout . . .	0	0	4,87

Difference of Longitude between Pulo Pinnee and Pulo Gaunsah Lout.

Chronometer Earnshaw.

	h.	′	″
By 1st Set of Observations	0	0	6,46
2d "	0	0	4,12
3d "	0	0	4,87
Mean . .	0	0	5,15

OBSERVATIONS at PADANG.

For the Time, and Longitude.

1823 Month.	Time per Chronometer No. 291.	Double Altitude of the Sun.	Limb of Station.	Refraction.	Parallax.	Sun's corrected Altitude.	Sun's Declination.	Apparent Time.	Equation of Time.	Mean Time.	Chronometer Fast on Mean Time.
	h. ′ ″	° ′	°	′ ″	′	° ′ ″	° ′ ″	h. ′ ″	′ ″	h. ′ ″	h. ′ ″
April 6	11 1 44	72 0 L.L.									
	5 38,5	72 0 U.L.									
	8 18,5	71 0 L.L.									Slow.
	7 55	71 0 U.L.	+1,61	−1 10,5	7,5	35 28 47,5	5 43 33,5	11 20 43,46	+3 58,77	11 20 30,69	4 33 18,83
	9 32	69 0 L.L.									
	11 20	69 0 U.L.									

Difference of Longitude between Natal and Padang.[a]

	h.	′	″
1823. March 28, Chronometer 291, Slow for Mean Time at 0h. 22′ at Natal ...	4	33	29
April 4, Chronometer 291, Slow for Mean Time at 5 29 at Padang ..	4	33	18,83
Difference ...	0	0	29,67
Mean Rate of Chronometer at Natal and Padang (at 13,00") Losing per day[b] in an interval of 6 days, 6 hours, 6 minutes	—	1	24,11
Difference of Longitude in Time between Natal and Padang	0	1	10,7
Difference of Longitude in Degrees between Natal and Padang	1	17	10,5 E.

Observations at Pulo Oan.

For the Time, and Longitude.

1823 Month.	Time per Chronometer No. 291.	Double Altitude of the Sun.	Limb of Station.	Refraction.	Parallax.	Sun's corrected Altitude.	Sun's Declination.	Apparent Time.	Equation of Time.	Mean Time.	Chronometer Slow or Fast on Mean Time.
	h. ′ ″	° ′	°	′ ″	′	° ′ ″	° ′ ″	h. ′ ″	′ ″	h. ′ ″	h. ′ ″
April 6	0 37 48	92 0 U.L.									
	33 58	92 0 L.L.									
	36 50,5	94 0 U.L.									Slow.
	37 3	94 0 L.L.	+13,50	−0,33	+7,5	46 39 19,5	5 38 53,5	21 11 6,61	+2 55,76	21 13 29,51	4 33 33,43
	40 50,5	86 0 U.L.									
	42 8,5	86 0 L.L.									

Difference of Longitude between Natal and Pulo Oan.

	h.	′	″
1823. March 28, Chronometer 291, Slow for Mean Time at 22h 22′ at Natal ..	4	33	29
April 6, Chronometer 291, Slow for Mean Time at 21 13 at Pulo Oan ..	4	33	33,43
Difference ...	0	0	34,43
Mean Rate of Chronometer at Natal and Pulo Oan (12,00" Loss per day) in an interval of 8 days, 23 hours, 43 minutes	—	1	28,13
Difference of Longitude in Time between Natal and Pulo Oan	0	0	57,89
Difference of Longitude in Degrees between Natal and Pulo Oan	1	44	28,35 E.

[a] Within a few yards of the Portuguese Church.

[b] Rate ascertained by Observations at Pulo Gunong Leat and Bencoolen on our return to that place.

Results. (L.)

Madras Observations and Bencoolen.

							h.	′	″
Chronometer	291.	Going to Bencoolen,	*Lawrence*	..	..	..	1	57	59,58
,,	297.	,,	,,	..	..	..	1	58	51,59
,,	Earnshaw	,,	,,	..	..		1	58	56,17
,,	291.	,,	*Robinson*	..	..	..	1	58	61,63
,,	297.	,,	,,	..	..		1	57	54,83
,,	291.	Returning from Bencoolen	,,	..	..	..	1	57	19,50
,,	Earnshaw	,,	,,	..	..		1	59	57,62
						Mean ...	1	57	43,9

But we may very fairly reject any Results which differ more than 4″ of time or 1′ of a degree from this Mean—Upon examination we find only the third result by Earnshaw thus differing, and rejecting that—The mean will be ... ... h. 1 ′ 57 ″ 52,49

or	...	...	Degrees ...	14 18 30 East.
Longitude of Madras Observatory	...	...	...	80 17 21
Longitude of Bencoolen by Chronometers	...	...		102 15 41 East.

Bencoolen and Tappanooly.

							h.	′	″
Chronometer	291.	Going to Tappanooly	*Lawrence*	..	..	..	0	11	45,9
,,	297.	,,	,,	..	..	..	0	14	57,59
,,	Earnshaw	,,	,,	..	..		0	13	37,87
						Mean ...	0	13	80,59

But 291 differing so much from the others we shall reject the result by it, and take the mean of the remaining two results;

						h.	′	″
This is	...	...	...	...	...	0	14	17,8
or	...	...	...		Degrees ...	3	34	34 West.
Longitude of Bencoolen	...	...	...			102	15	41 East.
Longitude of Tappanooly by Chronometers		...	...			98	41	17 East.

Tappanooly and Pulo Panjang.

							h.	′	″
Chronometer	291.	Going to Pulo Panjang	*Lawrence*	...	...		0	09	31,51
,,	297.	,,	,,	...	...		0	08	35,34
						Mean ...	0	08	33,42
						or Degrees ...	0	30	35,0 E.
Longitude of Tappanooly		...	...	...			98	41	17,0
Longitude of Pulo Panjang by Chronometers			...	...			99	27	19

Pulo Panjang and Pulo Pinang.

							h.	′	″
Chronometer	291.	Going to Pulo Pinang	*Lawrence*	...	...		0	11	39,05
,,	Earnshaw	,,	,,	...	...		0	09	51,58
						Mean ...	0	10	45,32

Pulo Panjong and Natal.

						h.	′	″
Chronometer	391.	Going to Natal	*Lawrence*	...	...	0	0	16
"	397.	"	"	...	...	0	1	24,9
"	Earnshaw	"	"	...	...	0	0	59,55
"	391.	Returning to Pulo Panjong	"	...	...	0	1	23
"	397.	"	"	...	...	0	0	59,4
"	Earnshaw	"	"	...	...	0	1	22
"	391.	Going to Natal	*Robinson*	...	...	0	0	40,65
"	397.	"	"	...	...	0	0	41,56
					Mean ..	0	0	56,17 w.
But rejecting the first result we shall have for the Mean					..	0	01	07,9
or	...	...	...	...	Degrees ..	0	15	29 W.
Longitude of Pulo Panjong			...	...	...	99	17	10 E.
Longitude of Natal by Chronometers			...	...	...	99	01	41

Natal and Pulo Pinnee.

Chronometer	391.	Going to Pulo Pinnee	*Robinson*	...	...	0	0	59,63
"	397.	"	"	...	...	0	0	58,36
"	Earnshaw	"	"	...	...	0	0	59,52
					Mean ..	0	0	56,3
Pulo Panjong and Natal		*Robinson and Lawrence*		...	...	0	01	04,9
"	and Pinnee	*Lawrence*	...	...	...	0	01	58,8
"	and "	"	...	...	...	0	02	00,9
					Mean ..	0	01	59,51 w.
					or Degrees ..	0	09	33 w.
Longitude of Pulo Panjong			...	...	...	99	17	10 E.
Longitude of Pulo Pinnee by Chronometers				...	...	98	47	17

Pulo Pinnee and Pulo Gaunsah Leut in Experiment Island.

Chronometer	Earnshaw	Going to Pulo Gaunsah Leut	*Lawrence*	...	0	0	10,3
"	"	"	*Robinson*	...	0	0	05,15
				Mean ..	0	00	07,75 w.
				or Degrees ..	0	01	58,8
Longitude of Pulo Pinnee			...	...	98	47	17
Longitude of Pulo Gaunsah Leut by Chronometers			...	...	98	48	13

		h.	′	″
Difference of Longitude between Bencoolen and Tappanooly	...	0	18	17,8 w.
" Tappanooly and Pulo Panjong	...	0	02	23,59 e.
" Bencoolen and Pulo Panjong	...	0	11	51,56 w.
" Pulo Panjong and Pulo Pinnee	...	0	01	59,55
" Bencoolen and Pulo Pinnee	...	0	13	52,63 W.
" Pulo Pinnee and Pulo Gaunsah Leut	..	0	0	07,75 e.
" Bencoolen and Pulo Gaunsah Leut	..	0	13	45,50 w.
" by the Eclipses of the Satellites of *Jupiter** allowing Bencoolen to be in 102° 15′ 48″	...	0	13	38,7
	Mean ..	0	13	42,3
	or Degrees ..	3	05	34,5 w.

* Vide next Page.

RESULTS of the ECLIPSES of the SATELLITES of JUPITER.

1822 Month.	Place of Observation.	Observed.	Satellite.	Immersion or Emersion.	Times per Chronometer.	Chronometer Slow or Fast to Mean Time.	Mean Time of Observation at Place.	Mean Time at Greenwich.	Longitude in Time.	Error of Tables by comparison with Observation taken at the Macao Observatory.	Longitude corrected for Error of Tables.	Difference of Longitude.	Longitude reduced to Paramatta Meridian.
					h. ′ ″	h. ′ ″	h. ′ ″	h. ′ ″	h. ′ ″	″	h. ′ ″	′ ″	h. ′ ″
Sept. 8	Dappanoy	*R.*	1	Im.	12 47 25 297	1 86 91 Slow.	14 34 34	8 91 58	6 34 64	+ 0 31,6	6 34 35,0	+0 21,5	6 31 47,5
Dec. 21 1821	Pale Frame	*R.*	1	Em.	9 02 30 *Even.*	0 27 05,5 "	8 29 25,5	2 03 44	6 25 53,0	— 0 33,8	6 25 19,7	0 07,7	6 25 27,4
Jan. 3	Pale Grounds Lent.	*R.*	1	"	11 55 50 "	0 27 59 "	19 19 29	5 34 14	6 25 06	0 28,7	6 24 43,3		6 24 43,3
9	"	*R.*	1	"	7 20 27 "	0 29 25,7 "	8 08 45,1	1 37 44	6 33 13,7	+ 0 22,5	6 33 35		6 33 35
9	"	*R.*	1	"	7 56 50 "	0 30 31,0 "	8 09 01,1	1 33 44	6 33 17,2	0 23,8	6 33 41,1		6 33 41,1
26	"	*R.*	1	"	6 45 58 "	0 27 22,5 "	7 14 23,5	0 38 43	6 35 37,5	— 0 23,3	6 35 14,2		6 35 14,2
26	"	*R.*	1	"	6 47 39 "	0 27 01,6 "	7 14 24,6	0 38 43	6 35 51,6	0 25,0	6 35 26,6		6 35 26,6
Feb. 17	"	*R.*	2	"	9 08 20 "	0 31 48 "	9 39 18	3 55 0	6 35 18	+ 0 09,9	6 35 27,9		6 35 27,9
20	"	*R.*	1	"	7 19 08 "	0 30 57,8 "	7 51 55,8	0 55 0	6 36 02,8	— 0 13	6 35 49,8		6 35 49,8
25	"	*R.*	1	"	7 18 53 "	0 29 57 "	7 51 57	0 55 0	6 35 57	0 23	6 35 34		6 35 34
Mar. 10	"	*R.*	2	Im.	5 10 58 "	0 0 17,4 *Fast.*	6 10 39,6	1 41 39	6 34 53,6	0 09,1	6 34 44,5		6 34 44,5
10	"	*R.*	2	"	6 10 53 "	0 0 17,8 "	6 10 35,8	1 41 39	6 34 56,8	0 09,1	6 34 47,1		6 34 47,1
18	"	*R.*	2	Em.	7 56 39 "	0 01 08 "	7 59 45	1 01 11	6 35 35	+ 0 23,1	6 35 58,3		6 35 58,3
											Mean . .		6 35 29,85

Table of Latitudes and Longitudes, of some of the Remarkable Places on the West Coast of Sumatra, of Prominent Points on the Ranges of Mountains and of some of the Islands about the Equator.

Names of Places.	Latitude.			Longitude from Madras Observatory.			Longitude from Greenwich.			Remarks.
	°	′	″	°	′	″	°	′	″	
Bencoolen	3	47	31 s.	21	58	23 s.	102	15	44 s.	Fort Marlbro' Turret
Rat Island	3	50	29	21	54	11	102	11	32	Station near the Wharf
Conspicuous Hill . . .	3	23	33	22	04	02	102	22	23	Centre
Sugar Loaf Peak . . .	3	34	31	22	09	45	102	27	06	
Lye Peak	3	14	48	21	57	42	102	15	03	
Lion's Range	3	51	41	22	09	02	102	25	23	Centre
Mt. Pengrove's Garden .	3	47	51	21	58	10	102	15	31	Staff on a Tree
Hamilton's Tomb . . .	3	48	34	21	58	43	102	17	06	Tomb
Argyle Hill	3	51	02	22	04	10	102	21	31	Mark
Tappanooly *Island* . .	1	43	47 s.	18	23	50	98	41	17	Staff on the height
Sugar Loaf Peak (Island)	1	38	54	18	22	26	98	37	47	
Natal	0	33	26	18	44	20	99	01	41	Station N. E. of the Fort
Pulo Panjong . . .	0	11	22	18	39	49	99	17	10	Station East of the Bungalow
Pulo Pahgang	0	10	22	18	57	23	99	14	44	Centre of the Island
Pulo Telloor	0	07	16	19	03	04	99	20	25	Station on the Island
Ayer Bongay *Hill* . .	0	11	02	19	03	43	99	21	04	Mark
Lulongan Hill	0	13	18	19	03	08	99	20	29	Bush
Gunung Allyer	0	13	41	19	04	23	99	21	44	Highest part of the Range
Mount Ophir	0	04	38	19	43	27	100	00	48	Remarkable Peak
High Peak on the Range	0	20	48	19	20	55	99	38	16	
Ayer Bongay	0	11	42	19	03	44	99	21	05	Station North of the Staff
Pangalanan	0	12	47	18	54	39	99	11	51	Highest Peak
Pulo Pinnee	0	04	40	18	29	36	98	47	17	S. E. point of the Island
Pulo Oolar	0	05	11	18	30	48	98	48	09	Centre of the Island
Nullang Hill	0	00	27	18	44	42	99	02	03	" " Peak
Oojung Tuan	0	14	19	18	45	28	99	02	49	Centre of the Hill
Lulongan Loolan . . .	0	14	05	18	47	04	99	04	25	Centre of the Hill
Tantechemanah	0	13	07	18	50	34	99	07	55	Highest part of the Hill
Pulo Gunnah	0	02	53	18	32	48	98	50	09	Centre of the Island
Pulo Gaussan Lout . .	0	01	49	18	32	45,5	98	50	00,5	Pillar on the Island

Referring to the Extracts from *Sir Stamford Raffles'* Letter before given, we find, only the Geographical Situation of Bencoolen, and that of two or three other Points in the Southward, are supposed to be accurately known—and even Bencoolen, according to the latest and best authorities, appears to be placed upwards of twelve miles more to the Eastward than it really is, supposing the Longitude here deduced to be correct—which there seems little reason to doubt. Proceeding to the Northward, we find Natal is considered to be in Longitude 99° 40' E., whereas according to the foregoing Deductions it is in Longitude 99° 1½'—So that between Bencoolen and Natal, in a difference of Latitude of little more than 4 degrees, there appears to be an error in Longitude of about 34 minutes. Mount Ophir according to a Chart of Arrowsmith's published ten or eleven years ago, is placed in about Longitude 100° 12, which is more than 11 miles too far to the Eastward. Natal is in 99° 24, or 44 East of the authorities before alluded to, and about 22 miles East of the Longitude deduced from the Observations given in this Report.

From all which it will appear, I imagine, that the Geographical Situations here deduced, are of considerable Value; and as was intended, will furnish Points of Departure for a Survey of the Coast and Islands, as well as for Navigators—who with good Chronometers on board, may do much towards filling up, with accuracy, between the Points now given—the greatest difficulty being to establish a Position to take a departure from—Bencoolen and Mount Ophir are two excellent Points—the other Principal Places here given, are not much inferior—Pulo Gunnath Lout, if Navigators could discover it, would also be among the best Places for taking a departure from—its Position being also so well laid down.

Madras Observatory,
[illegible] *January* 1824.

J. GOLDINGHAM,
Astronomer.

Note.——The first Letter to *Sir Stamford Raffles* at Bencoolen, was despatched from Madras about the middle of the year 1821. His reply is dated the 5th of September of that year. The Expedition embarked at Madras on the 13th of March 1822, and returned the 4th of June 1823. This Report was transmitted to *The Honorable The Governor in Council* of Madras about the beginning of 1824: Twenty Copies were printed, and a certain number of these sent to England, to *The Honorable The Court of Directors of the East India Company.*

TABLES

CONTAINING

RESULTS OF METEOROLOGICAL OBSERVATIONS

TAKEN AT THE

MADRAS OBSERVATORY,

UNDER THE SUPERINTENDENCE

OF

JOHN GOLDINGHAM, Esq. F. R. S.

ALSO,

OBSERVATIONS MADE EVERY HOUR,

FOR THE PURPOSE OF ASCERTAINING

THE VARIATION OF THE BAROMETER DURING THE 24 HOURS;

AND FOR OBTAINING COLLECTIONS FOR THE

Apparent Mean Heights of the Barometer, Thermometer and Hygrometer.

TABLES

CONTAINING

RESULTS OF METEOROLOGICAL OBSERVATIONS,

AT THE MADRAS OBSERVATORY,

&c. &c. &c.

METEOROLOGY may be considered among those enquiries in which mankind have made no very great progress; though much has been done of late years, and is no doubt still doing, to place it upon a level with other subjects of philosophical research occupying the attention of the present age. The collection of a body of facts, requiring constant and unremitted attention for years, and with the view of aiding those who are to follow at a distant period in drawing conclusions, is perhaps not very inviting; but this seems to be considered necessary before a correct view, can be expected to be obtained of the changes, and causes of the changes, in the Atmosphere surrounding our Planet, which are so steadily felt by those who inhabit it.

The Meteorological enquiries contained in this Paper were commenced in the year 1796; and it is hoped will be considered as adding a body of useful facts to the stock already obtained in Europe, as well as in other quarters of the Globe.

It was known that the Barometer is settled weather in this part of the world, had a *constant* and *regular* rise and fall during the 24 hours; and that the times of the greatest and least heights were nearly the same on different days; but I do not recollect that any observations upon a very extended scale have been taken to shew these changes.

It occurred by following the usual mode of observing the height of Meteorological Instruments—generally between Sunrise and eight or nine A. M.—the exact mean height of the 24 hours could not be obtained, and that it became necessary to apply a Correction. In order to find what this Correction should be, and at the same time, to obtain Observations upon an enlarged scale to shew the Diurnal Variation of the Barometer, I had the height of the latter, and of the Thermometer and Hygrometer, taken every hour during three days (the 15th, 20th, and 25th) of every month in the year 1807; and these Observations are comprised in Table I, which also contains, the Winds and Weather for every hour, during the 24, together with the Phases of the Moon for each month; the day of the nearest approach of that Planet to the Earth in the month, and the day of her greatest distance.

Table II contains the Height of the Thermometer and Barometer, also of the Hygrometer, taken from the Diary kept at the Observatory, and from the days on which the Observations at Table I were made—that is, the 15th, 20th, and 25th of each month—with the difference of the Means of both sets of Observations; which differences, are the Corrections

* A Paper drawn out by me similar to this, but not embracing so long a period as is included in some of these Tables, and with an Introduction different in some respects, was communicated to The Honorable Court of Directors of the East India Company by the Government of Madras in the year 1815. This Paper was sent home in 1816. J. G.

ought; and are applied to the Daily Means of the Diary as usually kept. The Corrections for the Monthly Means are found by taking the Mean of the daily Corrections. Both these Corrections are given in one view in the first and second Supplementary Tables. Table III contains the daily Mean height of the Barometer and Thermometer for each year—beginning with the year 1796 and ending in 1821—some few years not being included for the reason stated below. Table IV contains the Mean height of the Barometer for each day of the year between 1796 and 1821; the last Column but one of this Table contains the Corrections found from Tables I and II, as given in the first Supplementary Table; and the last Column shews the corrected Mean height of the Barometer for each day. Table V contains the Mean height of the Thermometer for each day of the year for an interval between 1796 and 1821; the two last Columns of this Table shew the Corrections and the corrected Mean heights.

Table VI contains the Monthly Means corrected by the numbers in the second Supplementary Table—and also shews the greatest and least heights with the extreme Differences of the Barometer and Thermometer during each year. The years 1822, 1823, 1824, and 1825, have been added to the original Table.

Table VII contains the General Mean Height of the Thermometer and Barometer at Madras between the years 1796 and 1821.*

Upon an examination of Table I we are forcibly struck with the regularity of the rise and fall of the Barometer in 24 hours—At 10 o'clock in the forenoon it is at the greatest height—it then continues to fall until a little after 5 in the afternoon, when it is lowest: it then rises again and before 11 at night it retains its highest point, and is again lowest at about 4 o'clock in the morning.—Any change of Wind or Weather will of course break this chain of regularity, more or less, according to the suddenness or violence of the change; but as there were no great or sudden changes in the 24 hours during the year 1823, the regularity is not much broken—scarcely at all indeed in the forenoon, but more at other times. The following are the times of the greatest and least Heights of the Barometer in 24 hours, as taken from the Diary.

Times of the greatest and least Heights of the Barometer in 24 hours, as shewn in Table I.

		Forenoon Greatest.	Afternoon Lowest.	Night Greatest.	Morning Lowest.
		h.	h.	h.	h.
1824 January	10	11	4	11	3½
1823	20	10	5	9½	3
	28	10½	5	10	3
February	10	10	6	10	4
	20	10	7	11	4½
	28	10	4	9	5
March	10	10	7	11	5
	20	10	5½	11	4
	28	10	6	11	5
April	10	10	6	11	5
	20	10	5½	10	4
	28	10	5	10	5
May	10	10	4	10	4
	20	10	5	10	5
	30	10	7	11	4
June	10	10	7	11	5
	20	10	5	10	4
	30	10	5	10	5
	Mean	10.10	5.25	10.8	5.42

* In the beginning of the year 1807 as I am informed, for I was then in England, the Barometer, which was a few one of Dollond's, by some means or other got out of order; and it appears on examining the Diary, to have gradually become more inconsistent, so that on my return to the Observatory, I was obliged to consider it quite unaccountably, appeared to have an error of nearly half an inch—much of the Quicksilver had an upset, and the remainder was sweetly acted upon by the Atmosphere.—Another Barometer was procured as soon as possible, with which I have had every reason to be satisfied. The height of the Barometer as given in the Diary between the beginning of the year 1807 and the early part of 1819, has therefore been omitted in drawing the Conclusions in this Paper.

		Forenoon Greatest.	Afternoon Least.	Night Greatest.	Morning Least.
		h.	h.	h.	h.
July	10	10	6	10	[illegible]
	20	10	7	12	5
	30	10	5	[illegible]	4
August	10	10	6	11	4½
	20	10	5	10	5
	30	11	5	11½	5
September	10	10	4	11	3
	20	9	4½	10	4
	30	10	5	11	5
October	10	10	6	10	3
	20	10	3½	10	4
	30	11	4	10	5
November	10	10	7	11	5
	20	10½	5	10½	5
	30	10	5	11	4
December	10	10	6	11	4
	20	10	4½	10	5
	30	11	6	10	4
Mean		10.14	5.42	10.6	4.38
First six Months		10.10	5.33	10.8	3.63
Mean		10.12	5.38	10.7	4.10

I have divided these into two portions of six months each, to ascertain if there would be any difference between the results of one interval, and those of another; these results are wonderfully near—much more so than one could have supposed. The following show the Variations in the Barometer in the 24 hours, during the days of observation in Table I; these are also divided into two portions of six months each, and the results of each interval are likewise strikingly near.

Variations of the Barometer in 24 hours, as shown in Table I.

			From 10 A. M. to 1 P. M.	1 P. M. to 10 P. M.	10 P. M. to 4 A. M.	4 A. M. to 10 A. M.
			Inches.	*Inches.*	*Inches.*	*Inches.*
1824	January	10	0.008	0.014	0.010	0.015
1825		22	0.063	0.028	0.023	0.078
		28	0.060	0.031	0.015	0.034
	February	10	0.073	0.062	0.039	0.014
		20	0.060	0.086	0.073	0.067
		28	0.050	0.032	0.061	0.029
	March	10	0.064	0.036	0.032	0.060
		20	0.067	0.037	0.040	0.060
		30	0.064	0.040	0.031	0.063
	April	10	0.077	0.029	0.018	0.067
		20	0.058	0.013	0.019	0.064
		30	0.078	0.076	0.025	0.019
	May	10	0.107	0.121	0.128	0.018
		20	0.077	0.073	0.077	0.051
		30	0.079	0.043	0.020	0.024
	June	10	0.102	0.014	0.021	0.082
		20	0.078	0.100	0.018	0.030
		30	0.081	0.053	0.014	0.045
		Mean	0.078	[illegible]	0.028	0.014

		From 10 A. M. to 4 P. M.	4 P. M. to 10 P. M.	10 P. M. to 4 A. M.	4 A. M. to 10 A. M.
		Inches.	Inches.	Inches.	Inches.
July	10	0.098	0.093	0.094	0.088
	20	0.110	0.105	0.098	0.098
	30	0.093	0.079	0.074	0.074
August	10	0.078	0.081	0.078	0.078
Full ● 9h, mean	20	0.117	0.103	0.088	0.078
☍ approach ☽	30	0.084	0.078	0.068	0.068
September	10	0.073	0.083	0.074	0.068
	20	0.118	0.079	0.074	0.078
	30	0.103	0.123	0.082	0.078
October	10	0.093	0.073	0.068	0.068
	20	0.085	0.063	0.058	0.068
	30	0.084	0.071	0.078	0.088
November	10	0.078	0.083	0.068	0.078
	20	0.078	0.078	0.074	0.078
	30	0.084	0.089	0.068	0.078
December	10	0.073	0.068	0.074	0.068
	20	0.068	0.073	0.068	0.068
	30	0.064	0.058	0.058	0.058
	Mean	0.090	0.084	0.078	0.078
	First 4 Months	0.079	0.069	0.058	0.054
	Mean of both	0.079	0.067	0.059	0.047

The Barometer is gradually lower at 11 P. M. than at 10 A. M., the times, as before mentioned, when it reaches its greatest height in the 24 hours—but it is lower at 5 P. M. than at 4 o'clock in the morning.

Hence it appears, that the Atmosphere is acted upon by an influence constantly and regularly operating during the year—that it has the greatest weight at ten o'clock in the forenoon, diminishing till five in the afternoon; when it begins to regain a part of what it had lost; it continues advancing towards its former state until about 11 at night, when it is nearly, though not quite the same weight as in the forenoon—the action of diminution of weight then commences, and a like effect is produced as by the disturbing power in the day—the Atmosphere however, is not affected in so great a degree, as when the Sun is above the horizon; and the cause continues in operation only till about 4 hours before Sunrise; when the weight begins again to increase.

The question may here arise—*Has the Moon any influence in effecting these changes in the Atmosphere?*

The influence of this Luminary upon the Waters of the Ocean is of course indisputable. The following Tide Table for Madras, is formed from a Mean of Observations, with which we have been furnished, and were taken ere before, when the Tunnel lately constructed here was completed. From the state of the Winds and other circumstances, it may possibly be necessary to have Observations during the year, in order to obtain a more accurate Tide Table, than that given here, which was formed from Observations of about five months only—from August till the close of the year.

Tides at the Sea Gate of Madras.

	High Water.	Low Water.
	h. ′	h. ′
New and Full Moon	8 3	11 9

			High Water.
			h. ′
1st	day of the Moon		5 22
2d	"	"	7 40
3d	"	"	8 59
4th	"	"	9 18
5th	"	"	10 04
6th	"	"	10 32
Quarter			11 40
8th	"	"	11 56
9th	"	"	1 16
10th	"	"	2 4
11th	"	"	2 37
12th	"	"	3 07
13th	"	"	4 05
14th	"	"	5 10
15th	"	"	6 4

From this it seems that the greatest influence of the Moon (combined with other circumstances) is exerted on the days of the new and full at 6h 4′. The ebb and flow of the Tide being about six hours each way—we are unable to find from these data any relation between the ebbing and flowing of the Sea and the changes in the Atmosphere at Madras—the Time of the Tide however, depends much upon the configuration of the Coast; and other circumstances may also be included, few of which are likely to affect the Atmosphere, and this time, besides, is changing daily, while the times of the Variation in the weight of the Atmosphere may be considered regular and constant.

From Table I. I have selected the days on which the Barometer was likely to be affected by the action of the Moon, and the following Statement exhibits the circumstances.

1819.

10th February Barometer 0,200 Inches higher than the greatest Moon of 21 years.—The Moon at the greatest distance from the Earth the day before—the Diurnal Variations of the Barometer near the Hours of the greatest and least heights—Hours of greatest and least heights near the Moon. Wind mostly N. E.—Weather clear.

20th February Barometer 0,181 Inches higher than the greatest Moon height, and nearly the greatest height.—Moon nearest the Earth on the 21st—Variations of the Barometer rise more and three large: Hours—near the noon. Wind N. E.—Clear—Dew at night.

24th February Variations of Barometer smaller than usual—full Moon the 25th—Hours of greatest and least heights—One noon—two midnights—one late—Wind S. E.—Mostly clear—and Dew at night.

9th March Barometer 0,027 Inches higher than the greatest Moon of 21 years—nearest approach of the Moon on this day. Variations rose still above noon—Hours noon.—Wind S. E.—Clear and Dew.

19th April Barometer near the greatest Moon.—New ☽ the day after—Variations of Barometer noon—Hour one noon—one late—one early—and one late—Land or S. W. and Wy. Wind and S. E.—at the Hours.—Clear and Dew.

30th April Barometer 0,007 Inches lower than the Moon—the ☽ at the greatest distance from the Earth this day.—Variations of the Barometer noon.—Hours, 2 midnight—the remaining one, (being at night), two hours later than the noon—Winds Land and S. E.—Clear.

29th May Barometer near the Moon.—New ☽.—Variations of the Barometer large, Hours nearly the noon.—Wind Land S. E. and N. W.—Lightning—Cloudy, some Rain.

19th June Barometer 0,016 Inches lower than the Moon.—New ☽ 9h.—Variations moderate.—Hours the noon.—Wind Land N. W. and S. E.—Mostly clear.

30th June	Barometer near the Mean of years—third Quarter of the Mean—Variations mean—Hours the same—Wind Land mostly, and hazy Weather.
19th July	Barometer 0.007 Inches lower than the Mean—New ☽ 6th, and nearest approach to the Earth on the 7th—Variations one mean—two small—one large—Hours mean—Wind Land and Sea—Hazy and Cloudy.
21st August	Barometer 0.007 Inches lower than the Mean—Full ☽ 7th—☽'s greatest distance on the 18th—Variations great—Hours near the mean—Wind Land and S. E. or S. E.—Mostly clear—Rain latterly.
20th September	Barometer 0.035 Inches lower than the Mean—Full ☽—Variations one large—one mean—one small and the other near the mean—Hours two earlier and two mean—mostly Land and S. E. Winds—some Rain latterly—Cloudy.
25th October	Barometer 0.070 Inches higher than the Mean—Full ☽, and nearest approach the 24th—Variations and Hours near the mean—Wind S. E. and Calm—Clear.
30th November	Barometer 0.100 Inches higher than the Mean—☽'s nearest approach—Full ☽ the 18th—Variations small—Hours near the mean—Wind N. E. mostly—Flying Clouds.
16th December	First Quarter—Barometer 0.109 Inches higher than the Mean—Variations and Hours near the mean—Wind S. E. moderate—Mostly clear.
30th December	Barometer Mean nearly—New ☽ 1st—Variations 1 small—1 mean—two large—Hours 2 late and 2 early—Wind N. E.—Mostly clear—with Flying Clouds.

In 1823. The Sun was nearest to the Earth on the 31st December, at the greatest distance July 8th—Mean Distance 3d April and 3d of October.

It must be observed that the height of the Barometer during this year (1823) when there was no Monsoon Rains, was greater than the general Mean height of years by 0,000—this has been allowed in these comparisons—The heights of the Barometer in these comparisons, were sometimes greater and other times less than the Mean height of all the years brought into this view on the same days; and on the same days in some years, the Barometer was also higher, as well as lower than the above.

The following are the Mean corrected Heights of the Barometer on the foregoing days of comparison, during the interval of years brought into this Paper.

	General Means
	Inches.
10th February	29,883
20th "	29,904
10th "	29,885
20th March	29,902
10th April	29,904
20th "	29,908
10th May	29,883
20th June	29,851
30th "	29,864
10th July	29,851
20th August	29,885
20th September	29,912
20th October	29,946
30th November	30,000
20th December	30,048
30th "	30,102

We have also selected the greatest and least Heights of the Barometer on the above days, in the interval of years brought into view in this Paper.

	Year.	Wind.	Barometer.	Inches.	Phases of the ☽.	Distance of the ☽ from the Earth.	Weather.
16th February	1811	SE	Greatest height	29,[illegible]	First quarter	Mean	Clear.
" "	1812	NNE	Least "	29,[illegible]	4 days before full	Nearest	Clear.
16th "	1801	Calm and E	Greatest "	30,[illegible]	5 " " "	Mean	Day clear, night foggy and dew.
" "	1809	E	Least "	29,[illegible]	2 " " "	Nearest	Clear.
26th "	1801	Calm and SE	Greatest "	30,[illegible]	Last quarter	Mean	Clear.
" "	1812	SE	Least "	29,[illegible]	7 days before new	Mean	Clear.
12th March	1812	Calm and SE	Greatest "	30,[illegible]	5 " " "	Mean	Clear and hazy weather.
" "	1813	SE	Least "	29,[illegible]	4 days after full	Greatest distance	Clear.
10th April	1811	Calm and SE	Greatest "	30,[illegible]	First quarter	Do. nearly	Clear and hazy.
" "	1813	Land and SE	Least "	29,[illegible]	5 days before full	Mean	Clear.
20th April	1811	SE	Greatest "	30,[illegible]	1 " " new	Nearest	Clear and hazy.
" "	1813	Land and SE	Least "	29,[illegible]	New	"	Hazy.
10th May	1817	SE	Greatest "	29,[illegible]	5 days before new	Greatest	Hazy and cloudy.
" "	1813	Hot Land and SE	Least "	29,[illegible]	4 " " full	"	Nearly clear.
10th June	1811	SE	Greatest "	29,[illegible]	3 " " full	Mean	Clear.
" "	1813	Land and SE	Least "	29,[illegible]	3 " " full	Greatest	Cloudy nearly.
20th June	1813	Land and S	Greatest "	29,[illegible]	5 " " full	Rather great	Hazy and clear.
" "	1813	Calm and SE	Least "	29,[illegible]	3 " after new	Mean	Cloudy and some rain.
10th July	1776	SE. clear at times	Greatest "	30,[illegible]	First quarter	Rather near	Do. and rain at night.
" "	1814	Land and SE	Least "	29,[illegible]	Third "	Mean	Do. and some rain.
20th August	1814	Calm and SE	Greatest "	30,[illegible]	Full	Mean	Clear.
" "	1814	Land	Least "	29,[illegible]	3 days after new	Rather far	Cloudy.
20th September	1820	W to N	Greatest "	30,[illegible]	1 " before full	Near	Hazy and some rain.
" "	1817	Land and SE	Least "	29,[illegible]	4 " " "	Rather far	Cloudy do. do.
20th October	1811	NW and NE	Greatest "	30,[illegible]	3 " " new	" "	Clear.
" "	1807	NE	Least "	29,[illegible]	4 " after full	" "	Do.
20th November	1821	Calm	Greatest "	30,[illegible]	4 " before new	Greatest	Do. and dew.
" "	1802	N	Least "	29,[illegible]	4 " " "	"	Cloudy, rain, thunder and lightning.
10th December	1816	NE	Greatest "	30,[illegible]	4 " after full	Mean	Clear nearly.
" "	1807	NNW	Least "	29,[illegible]	2 " before new	Far	Rain, thunder and lightning.
20th "	1807	SE	Greatest "	30,[illegible]	2 " after new	Mean nearly	Clear.
" "	1800	Calm	Least "	29,[illegible]	Full	Far	Cloudy and showers.

A particular examination of the whole of the foregoing does not lead us to the conclusion, that the Moon has any essential influence, in these changes of the Air, as shown by the Barometer. The Sun is of course the most powerful Agent in the Motion of the Atmosphere of the Earth; but it would not seem that the Moon is intended to have much influence in this respect: While that Planet moves the Waters of the Ocean, and gives light to the Earth, we should conclude from such Experiments that it exerts a steady attractive power upon the Air; but that her influence, as regards the Motion and Changes in the Atmosphere, does not appear to be by any means so great as is commonly supposed; and with respect to the Motion shown by these Tables—that would seem to be effected by regularly ordained causes, with the view of rendering the Atmosphere united for the purposes intended.—And we are led to the conclusion, that it is essential to the Creation it surrounds, that these Changes in the Atmosphere should be made regularly at or near the same hours every day—while the times of the Fox and reflux of the Ocean are daily changing. Any Enquirer, with more leisure than we have at present, inclined to pursue the subject of the influence of the Moon, may find other materials, besides the foregoing, in the Tables we have given.

If we examine Table V, we shall find the hottest day at Madras by the Mean of all the daily Observations during the 21 years, in the 11th of June, when the Mean height of the Thermometer in the 24 hours is 87°,10—the Mean

varying however, in different years, from 55°,5 to 81°,6. The coldest day is the 9th of January; the Mean height of the Thermometer on that day, being 74°,35, and the Mean varying from 77°,1 to 74°,7.—On the 25th of March and the 29th of October, the Thermometer is at the Mean height.

The Mean height as deduced in Table VII from the Monthly heights is 81°,79—and the greatest extreme of heat was 104°,5: the least height of the Thermometer 64°—the former occurred at 2 P. M. on the 19th of May (a very hot land Wind blowing) in the year 1813; and the latter, on the 28th of January 1819 at Sun-rise—such extremes however, are rare—the Thermometer at Madras being seldom above 98° or below 67°. The Mean daily heights of the Thermometer for 21 years as before noticed, will be found in Table V, and the Mean monthly heights for the same period in Table VIII. This Table also contains the Mean monthly height of the Hygrometer and the average monthly fall of Rain.

The hottest time of the twenty-four hours at Madras, taking the Mean of the twelve months, is about three quarters of an hour past noon; this varies at different times of the year from 11 A. M. to 3 P. M.—the coolest time of the 24 hours is about half an hour past four in the morning; and the Thermometer is nearly at the Mean height, at a little after 7 in the evening, and about 9 in the forenoon. The following Statement shews the average times of the greatest, least and mean heat during each month; and is founded on the Observations in Table I.

Months.	Heat.			
	Greatest, Afternoon.	Least Morning.	Mean.	
			Evening.	Forenoon.
	H.	H.	H.	H.
January	1.2	4.3	7.3	9.2
February	12	4.2	7.2	9.9
March	11.7	4.5	7.4	9.7
April	12	4.7	7.3	9.6
May	11.7 A. M.	4.4	6.4	9.4
June	2	4.3	7.6	9.8
July	2.3	4	6.8	9.6
August	3	4	7.4	9.7
September	2	4.5	7.5	9.8
October	12	4.8	6.7	9.7
November	12.3	4.7	6.4	9.8
December	12.7	4.3	6.6	9.4
Mean	12.8	4.8	7.2	9.9

According to the Mean of the Hygrometer during the year 1823, the Atmosphere at Madras is least Moist, at about 8 o'clock in the afternoon; has the most Moisture at a quarter before six in the morning; and is in a mean state, at a quarter past nine at night, and about an hour later in the forenoon. The following Statement, founded on the Observations in Table I, shews the average times when the Atmosphere has the greatest and least Moisture, and when it is in a mean state, in each month.

Months.	Average.			
	Most dry. Afternoon.	Least dry. Morning.	In a Mean state.	
			Night.	Forenoon.
	n.	h.	n.	n.
January	1.3	9	7.3	67.7
February	1.7	9.3	10.8	81.7
March	1.3	8.3	10.4	90.5
April	10.7	8.7	9.7	8.3
May	11.9	8.8	7.7	8.8
June	1.3	8.8	7.8	8.8
July	2.7	8.8	8.3	10.4
August	10.7	8.7	9	10.4
September	2.7	8.3	8.8	10
October	2.3	8.9	7.4	8.8
November	2.8	9	10.3	11.3
December	3	8.8	11	10.4
Mean	9.1	8.7	8.9	10.3

The Barometer is highest at Madras upon an average of years, on the 3d of January; and lowest about the end of May—the range being from 29,154 to 29,824; but in the Storm we have had of late years, the Barometer was depressed to an extraordinary degree for this place, as I shall more particularly notice, before I close these Remarks.

The Barometer is 0,148 Inches higher and the Thermometer 7°,5 lower in the NE. Monsoon than in the SW.; as will appear by the following Statement.

Mean Height of the Thermometer and Barometer during the

NE. Monsoon between 1790 and 1801.			*SW. Monsoon between 1790 and 1801.*		
Months.	Thermometer.	Barometer.	Months.	Thermometer.	Barometer.
	°	Inches.		°	Inches.
October	81.348	29.918	April	91.417	29.818
November	79.571	29.918	May	89.259	29.815
December	77.842	29.974	June	86.317	29.893
January	76.169	30.004	July	85.531	29.907
February	77.317	30.075	August	84.731	29.879
March	79.950	30.041	September	85.933	29.899
Mean	78.199	29.988	Mean	85.883	29.891
				78.199	30.038
			Difference	7.684	0.148

Winds and Weather.—The division of the Winds at Madras, dependent upon the place of the Sun, is into the NE. and SW. Monsoons.—The NE. Monsoon, taking the average of 10 years, sets in on the 25th of October, and ends

* This agrees nearly with the received practice which is to leave the Bay Seaf of the Fort at Madras on the 15th of October, when the Surrey Member is considered to commence: It is limited again on the 15th of December, after which Ships may approach the Coast with safety as is supposed.

about the 2d of March; heavy Rains falling from its commencement to the middle of December; attended at times by Gales of Wind; after which, till the close of this Monsoon, the Air is generally clear and cool, and the Weather pleasant.—The Mean fall of Rain during the Monsoon Season, as this is arrived, is about 22 or 24 Inches.—The whole fall during the year (vide Table VIII) is 20,314* Inches, including the fall during the Storms we have had of late years; but only 40,318 Inches, if we reduce that fall, to the fall of ordinary years.

The South Wind commences about the 2d of March, it blows along the shore, and brings a great degree of dampness with it, having at the same time a chilliness which, combined with the damp, make it much complained of; this Wind blows, according to the average standard before mentioned, till the 15th of April, when there are sometimes for a week or two Land to SW. and Wy. Winds, and at other times South and SEy. Winds—the Land Wind sets in about the 18th of May and continues blowing, and mostly hot, during some weeks—ended at intervals however, by thorsts; it afterwards prevails only in the night, and in the early part of the Sixtimes, when during the remainder of the day its place is supplied by the SE. or Sea breeze.—About a month or more before the change of the Monsoon and commencement of the Rains, the Wind is variable, with Calms and a sultry and oppressive state of the Atmosphere.

I have given the average times of the commencement of the Monsoons; but there are considerable variations in a stated period of years; in the interval under review, for example, the NE. Monsoon and Rains set in one year as early as the 20th of September; and another year as late as the beginning of November. The Land Wind also has commenced at one time as early as the end of April, and has kept off at another, till the beginning of June.—Respecting the state of the Atmosphere, the results of these Meteorological Observations show it is not quite so clear and serene as is commonly supposed; the mean of 26 years, giving us during the Sun's Revolution, only one hundred and eighty-clear days,—the remainder of the year is made up of sixty-four days, clear in some part of the 24 hours, and the other part cloudy or hazy; of ninety-six cloudy days, and twenty-five hazy: there are also during the year fifty-seven on which rain falls; thirty-one, when there is a dew—and only eighteen with lightning.

The following Table, being the Mean of the details of the Weather in the Diary, for the foregoing period of twenty-six years, shows how this state of the Atmosphere was divided among the different† months.

Months.	Clear.	Cloudy.	Hazy.	Clear, Hazy, Cloudy.	Rain.	Dew.	Lightning.
	Days.	Days.	Days.	Days.	Days.	Days.	Days.
January	10	6	5	4	1	3	..
February	11	1	6	2	..	3	..
March	12	1	..	3	..	7	..
April	14	2	5	3	1	5	2
May	10	4	9	6	2	..	1
June	8	11	5	6	6	..	3
July	8	12	3	7	6	..	5
August	8	12	3	6	7	..	6
September	8	10	4	7	7	..	7
October	11	12	3	5	10	3	2
November	11	13	2	4	9	3	..
December	12	11	5	3	5	2	..
Averaged by the Mean	180	90	23	64	57	21	18

* Table IX contains the fall of Rain for additional years, making altogether 18 years, and the mean fall during the whole interval, is rather less than that above.

† This Table was constructed from a great mass of detail; requiring considerable time to reduce to its present limits.

Gales of Wind, and Storms.—Gales of Wind at Madras usually occur during the Rainy Season, between the 15th of October, and the middle of December; the Barometer seldom sinks much more than four tenths of an Inch, and rarely lower than 29,45 Inches. These Gales begin either at the Westward or North, along the Shore, veer to the Eastward, and increase in violence as they get round; this change of direction continues, the Wind gradually abating until it is at South, when it frequently falls almost calm.—From what has been just stated, the necessity for Ships in Madras Roads, getting under weigh immediately a Gale commences, is apparent, as when the Wind has veered Easterly, it is next to impossible to get from them, and the Vessels must be driven on Shore.

I shall proceed to give some particulars of Gales we have had during the period comprised in the Diary.

On the 27th of October 1797. The Moon having just passed the last quarter, and being at the greatest distance from the Earth, there was a violent Gale of Wind at Madras, somewhat resembling the Storm of last year; it began from the Northward in the night between the 26th and 27th, veered to the N. E. and in the morning blew with uncommon violence during three hours.—About noon it suddenly shifted to the South, and was almost as violent as before.—many old trees were torn up by the roots, and the leaves on the south side of those much exposed, were either blown off, or completely withered.—The Barometer began to fall at about noon on the 25th and at 9 o'clock P. M. on the 27th had sunk to 29,163 from 29,550, or about 3,34 of an Inch. This, though not quite so violent as the late Storm, was an ordinary Gale of Wind.

On the 15th December 1807. The Moon half way between the first quarter and full: and nearly at the greatest distance from the Earth.—There was a Gale at Madras.—It began in the evening from the North, and was attended with Thunder, Lightning and Rain: veering to the Southward of East, and blowing with violence, it slackened gradually after noon, and at 2 P. M. the Sky was again clear. The Barometer fell about 0,4 of an Inch; Rain 25 Inches.

On the night between the 29th and 30th of March 1808, a strong Gale of Wind occurred.—The Moon at the full, but nearly at her greatest distance from the Earth: this Gale commenced from N.E. and blew very violent at times.—Contrary to the course of the Monsoon Gales, it veered to the North, NW. and SW.—still violent—but at the latter quarter it gradually slackened; and broke up at about 8 A. M. The Barometer fell 0,19 of an Inch, and was a little above 29,5 which is the greatest depression; about 31 Inches of Rain fell. The Ships left the Roads in the evening, but some of the smaller Craft were driven on shore, and others went down at their Anchors—several Ships and smaller Vessels were lost along the Coast during the Gale, which appears to have been more violent to the Northward than here.

The Storms we have had of late years at Madras resemble Whirlwinds, blowing all round the Compass (from particular points with incredible force), and are generally confined to a space comparatively small in diameter. I shall this endeavour to give some of the leading features of them.

On the 3d of May 1811. A violent Storm occurred at Madras; the Moon had passed the first quarter on the 29th of April, and was full on the 6th of May, and was also at the greatest distance from the Earth.—This Storm raged with great fury, and did considerable mischief: I was in England at the time, but it appears from what I can collect, to have begun from the Northward, and to have blown equally strong from the East, SE. and South.—I do not however, find the details in the Diary.—The Barometer also, was so much out of order (as I have mentioned in a former part of these Remarks), that nothing can be correctly stated regarding its depression.*—The fall of Rain was about five Inches and a

* The depression above does not appear to have been two tenths of an Inch, and consequently the Instrument had scarcely any action.

hail.—It appears from the notices published at the time, that early on the 1st of May the Surf was observed to be unusually high, while thick Clouds continued to gather during the day from the NE. and that by daylight on the 2d the Wind blew very hard, accompanied by heavy Rain—about noon it increased, and towards midnight had arrived at its greatest height—when it blew with incredible fury. A friend who was at the Presidency at the time, and who had great reason to recollect this Storm, informs me, that raging with the greatest fury it destroyed every Vessel in the Roads with the exception of three—a small Spanish Ship—an American—and a French Cartel Ship—these stood out to Sea—but the former was driven on shore near Cuddalore; Ninety Country Vessels were down at their Anchors, and all the rest were driven on shore—along with the Dover Frigate and Chichester Store-Ship: The whole Beach being covered with wreck and dead bodies, for two miles North and South of Madras. The Papers state, that the Storm was not felt at the distance of forty miles from Madras.

On the 25th of October 1818. A second violent Storm occurred at Madras,—the Moon had passed the last quarter about two days, and was at nearly her greatest distance from the Earth. The Wind, which was a strong Ny.-Gale early in the morning, before 12 in the forenoon had increased to a Storm—an awful prose of hail an hour occurred about this time, after which it blew a complete Hurricane from the South, with a fury never perhaps before experienced at Madras—some of the oldest trees, which had resisted the former Storm, were rooted up,—and the largest branches of others were torn off, by the force of the Wind—In some trees of a tough description of wood, such branches were seen hanging down and twisted, having been whirled round and round by the fury of the Storm—such a scene of desolation was presented, as had hardly been witnessed here.—Numbers of native habitations were terrified, many of the large Buildings injured, and some lives lost—several Ships and Brigs were at anchor in the Roads—all these got under weigh—but the latter were driven on shore, and one of the Ships foundered; another was driven on shore to the Northward, and a third rendered not seaworthy—while the others generally sustained good damage.—The fall of Rain was about 5 Inches. The Barometer had fallen between 8 o'clock P. M. of the 25th and daylight of the 26th, nearly three tenths of an Inch, standing at about 29,1—but during the worst Lull at 12 A. M., it was at 28,783 Inches—a most extraordinary and terrific depression—such as I never before heard of at this place—towards noon it had risen about half an Inch, and at Sunset was at 27,63 Inches.

On the 9th of May 1822, another Storm occurred at Madras—the Moon having been between the third quarter and new, but at her nearest approach to the Earth. It commenced in the evening of the 8th in a gale from the NW. increasing and blowing very strong before morning, accompanied by torrents of Rain. Violent gusts continued all day of the 9th, when the Wind began to shift round to W. and SW. blowing with greater violence, if possible, than before; and the Rain still falling in torrents. Before noon on the 10th, the violence of the Storm had subsided. This Storm was of far longer duration than either of those that preceded it—but the Gales accompanied by torrents of Rain, and veering to different points of the Compass. The damage on shore was great and distressing, very many lives were stated to have been lost by this awful visitation at, and in the vicinity of the Presidency; most of the Ships put to Sea early, but great destruction took place among the smaller Vessels—only one Ship was lost. The Tanks burst, and the Rivers overflowed in all directions, to the great destruction of property. This Storm appears to have had a wider range than the Storms. The Barometer which on the 8th in the forenoon was at 29,750 Inches, had fallen at Sun-rise on the 9th to 29,460 Inches—by noon on the same day to 29,135 Inches—at 2 P. M. it was at 28,520 Inches; and at 3 at 28,670 Inches—lower even than during the former Storm. By Sun-rise on the 10th it had risen to 29,612 Inches and before noon on that day to the accustomed height of the time of year. Between the 8th at night and the 10th at Sun-rise, about 16 Inches of Rain fell.

It may probably appear somewhat extraordinary to those who consider the Moon as having great influence in Gales

and Storms, that at the times of those above noticed, she was always (with only one exception) in a part of her Orbit, when I believe, she is considered by such persons, to have least influence; in one Gale only, was the Moon at full—having also been mostly at the greatest distance from the Earth.* This would seem to afford a corroboration of what has been noticed in the former part of these Remarks respecting the Lunar influence upon the Atmosphere: and if one were inclined to draw any conclusion from the circumstances under which these Gales and Storms occurred, it might be to ascribe to the Moon a protecting power against such visitations, instead of aiding to produce them; having been generally far removed from the Earth at the time, and not in that part of her course where, acting in combination with the Sun, she might be supposed to have the greatest influence.

* In four of the above instances, the Moon upon a mean, passed the Meridian at 20 degrees South of the Zenith of Madras; in three instances she passed at 4 degrees South, and the remaining two within about a degree to the Northward.

TABLE I.

DIARY FOR EVERY HOUR.

PENRHYN.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
1824	H.	Inches.	°	°			
A.M. 10th	6	30,160	69,2	55,0		NE.	Clear and Dew.
	7	30,112	70,0	59,0		NE.	Clear.
	8	30,135	71,5	53,0		NE.	Do.
	9	30,144	74,5	56,0		NE.	Do.
	10	30,148	78,0	57,0		NE.	Do.
	11	30,150	80,5	58,5		NE.	Do.
	Noon	30,145	83,6	61,0		NE.	Do.
P. M.	1	30,118	86,0	62,0		NE.	Do.
	2	30,105	85,0	65,2		NE.	Do.
	3	30,087	85,2	64,5		NE.	Do.
	4	30,100	85,0	64,0		NE.	Do.
	5	30,098	81,8	63,5		NE.	Do.
	6	30,102	79,2	62,0		NE.	Do.
	7	30,100	76,6	60,0		Lt. NE.	Do.
	8	30,118	76,0	59,5		Calm.	Clear and Dew.
	9	30,125	75,0	59,0		Lt. NE.	Do.
	10	30,135	71,4	59,0		Calm.	Do.
	11	30,132	71,0	59,0		Do.	Do.
	12	30,130	71,5	58,0		Do.	Do.
A. M.	1	30,145	69,5	57,0		Calm.	Clear.
	2	30,135	70,2	57,5		Do.	Do.
	3	30,125	68,5	57,5		Do.	Do.
	4	30,125	68,5	57,7		Do.	Do.
	5	30,127	68,0	57,0		Do.	Do.
	Mean	30,123	75,74	58,81			

Phases of the Moon

for January 1824.

	D.	H.	M.
New Moon	1	1	48 A.
First Quarter	9	5	37 A.
Full Moon	16	2	11 A.
Last Quarter	23	7	7 M.
New Moon	31	9	8 M.

The neutral approach of the Moon to the Earth in January was on the 16th.—The Moon had receded in the greatest distance, during the month, on the 20th.

TABLE I, continued.

DIARY FOR EVERY HOUR.

JANUARY 1825.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer.		Winds.	Weather.
				Dry.	Damp.		
1825	h.	Inches.	°	°			
9th A. M.	6	30,192	77,5	19,5		Calm.	
	7	30,143	76,5	17,0			
	8	30,250	75,5	17,0			
	9	30,350	78,0	16,0			
	10	30,300	81,0	16,0			
	11	30,295	82,5	17,0			
P. M.	Noon	30,278	84,4	18,5			
	1	30,185	83,0	19,5			
	2	30,225	83,0	19			
	3	30,275	83,0	19,0			
	4	30,290	82,0	18,5			
	5	30,317	81,7	19,0			
	6	30,318	80,5	18,5			
	7	30,320	79,0	18,5			
	8	30,340	79,0	17,5			
	9	30,315	78,5	17,0			
	10	30,315	79,0	17,0			
	11	30,320	79,0	17,5			
	Midnight	30,325	79,0	17,5			
A. M.	1	30,340	78,0	16,7			
	2	30,330	77,0	16,0			
	3	30,320	77,0	15,5			
	4	30,325	76,0	15,5			
	5	30,324	74,0	15,0			
	Mean	30,277	79,55	17,6			

Phases of the Moon for January 1825.

	h.	d.	s.
Last Quarter	4	9	31 M.
New Moon	11	8	15 A.
First Quarter	20	7	21 M.
Full Moon	28	10	22 A.

The Moon had receded to the greatest distance, during the month, on the 9th.—The nearest approach of the Moon to the Earth this month, was on the 25th.

TABLE I, continued.

DIARY FOR EVERY HOUR.

JANUARY 1823.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
1823.	h.	Inches.	°	°	°		
26th A. M.	6	30,158	77,9	90,0		Calm	Clear and Dew.
	7	30,170	78,5	90,8		Do.	Clear.
	8	30,178	77,9	78,8		Do.	Do.
	9	30,200	79,9	90,2		NEy.	Do.
	10	30,200	80,0	90,5		Do.	Do.
	11	30,200	83,6	90,7		E by S	Do.
	Noon	30,200	84,0	90,5		NEy.	Do.
P. M.	1	30,198	83,5	91,0		E by S	Do.
	2	30,190	83,4	91,0		Do.	Do.
	3	30,185	80,5	90,8		Do.	Do.
	4	30,184	80,8	91,5		Ey.	Do.
	5	30,189	81,6	91,8		ENEy.	Do.
	6	30,190	80,0	90,5		Do.	Do.
	7	30,194	78,5	90,8		E by N	Do.
	8	30,198	78,0	90,8		Ey.	Do.
	9	30,170	77,0	93,8		E by N	Clear and Dew.
	10	30,200	76,9	94,0		Lt. Ey.	Do.
	11	30,189	78,5	94,0		Do.	Do.
	Midnight	30,190	77,5	93,4		Do.	Do.
A. M.	1	30,198	76,6	93,0		Calm	Do.
	2	30,190	75,3	92,6		Do.	Clear.
	3	30,179	74,4	92,0		Lt NWy	Do.
	4	30,178	75,6	91,0		N by W	Do.
	5	30,178	76,4	90,6		Do.	Do.
	Mean	30,175	78,9	91,6			

TABLE I, *continued.*

DIARY FOR EVERY HOUR.

FEBRUARY 1823.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
1823	H.	Inches.	°	°	°		
10th A. M.	6	30,235	76,5	21,0		Calm	Clear.
	7	30,230	78,0	21,5		Do.	Do.
	8	30,236	78,5	22,5		Lt. SEy.	Do.
	9	30,236	80,0	22,0		SEy.	This Haze.
	10	30,235	83,0	22,8		Do.	Clear.
	11	30,209	84,0	23,5		Do.	Do.
	Noon	30,198	85,4	24,0		SE by E	Do.
P. M.	1	30,230	84,3	23,7		Ey.	Do.
	2	30,230	84,9	23,5		SE.	Do.
	3	30,228	83,7	23,5		E by N	Do.
	4	30,192	83,0	23,0		ENE.	Do.
	5	30,195	82,4	23,4		Ey.	Do.
	6	30,195	81,9	23,2		Do.	Do.
	7	30,200	79,5	23,4		E by S	Do.
	8	30,200	79,0	23,0		Lt. Ey.	Do.
	9	30,250	78,8	23,2		Do.	Do.
	10	30,254	78,2	23,0		NEy.	Do.
	11	30,245	77,2	23,0		Do.	Clear; Dew.
	Midnight	30,249	77,0	23,0		Calm	Do. Do.
A. M.	1	30,246	77,0	23,0		Lt. E by S	Clear.
	2	30,230	76,2	24,5		Calm	Do.
	3	30,225	75,9	24,0		NW.	Do.
	4	30,213	72,5	23,9		Calm	Do.
	5	30,217	72,4	22,5		NW.	Do.
	Mean	30,232	79,48	24,65			

Phases of the Moon *for February 1823.*

	D.	H.	M.	
Last Quarter	3	3	55	M
New Moon	11	8	22	M
First Quarter	18	4	23	A
Full Moon	25	10	27	M

The Moon had receded to the greatest distance, during the month, on the 9th.—The nearest approach of the Moon to the Earth this month, was on the 21st.

TABLE I. continued.

DIARY FOR EVERY HOUR.

FEBRUARY 1823.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
1823	h.	Inches.	°	°			
20th A. M.	6	30,000	79,0	92,0		Lt. NEy.	Clear: Dew.
	7	30,150	76,8	85,5		Calm	Clear.
	8	30,160	77,8	93,5		Lt. NEy.	Thin Haze.
	9	30,218	79,4	91,0		NEy.	Clear.
	10	30,210	82,0	93,4		Do.	Do.
	11	30,205	84,7	92,7		Do.	Do.
	Noon	30,200	84,8	92,0		Do.	Do.
P. M.	1	30,215	85,0	93,4		ESE.	Do.
	2	30,178	84,8	93,5		ESE	Do.
	3	30,165	84,0	94,5		Do.	Do.
	4	30,160	84,8	94,0		Easly	Do.
	5	30,160	83,0	94,8		ESE.	Do.
	6	30,168	80,0	93,8		Lt. SE.	Do.
	7	30,158	80,7	93,3		Lt. NEy	Do.
	8	30,168	79,0	94,5		Do.	Do.
	9	30,163	79,4	94,0		Do.	Clear: Dew.
	10	30,230	78,0	93,3		NEy.	Do.
	11	30,258	77,8	92,0		Lt. NEy.	Clear.
	Midnight	30,260	76,5	92,5		Calm	Clear and Dew.
A. M.	1	30,196	79,5	92,0		Lt. NW.	Clear.
	2	30,200	78,4	92,0		Do.	Do.
	3	30,178	78,5	91,5		NW.	Do.
	4	30,175	76,9	92,5		Calm	Do.
	5	30,173	76,0	92,5		Do.	Do.
	Mean	30,190	79,7	92,54			

TABLE I, *continued.*

DIARY FOR EVERY HOUR.

FEBRUARY 1825.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
1825	H.	Inches.	°	°			
28th A. M.	6	30,025	78,5	19,2		Calm.	Thin Haze: heavy Dew.
	7	30,038	77,0	18,4		Do.	Clear: Dew.
	8	30,067	79,0	17,2		Do.	Clear.
	9	30,100	82,8	16,5		SEy.	Do.
	10	30,105	84,2	16,8		SEy.	Do.
	11	30,100	80,3	17,4		Do.	Do.
	Noon	30,100	80,0	18,0		Do.	Do.
P. M.	1	30,098	80,0	18,0		Do.	Do.
	2	30,068	80,0	19,2		SSE.	Somewhat Hazy.
	3	30,062	85,8	19,5		Do.	Thin Haze.
	4	30,055	85,5	19,5		SE.	Do.
	5	30,056	84,8	19,2		Do.	Clear.
	6	30,063	83,4	19,0		Lt. ESE.	Thin Haze.
	7	30,045	82,2	19,0		Lt. SE.	Clear.
	8	30,058	81,2	18,5		SEy.	Do.
	9	30,100	81,0	18,5		Lt. SEy.	Clear: Dew.
	10	30,088	81,2	18,2		Calm	Do.
	11	30,087	81,0	18,4		Do.	Do.
	Midnight	30,100	78,8	18,0		Do.	Do.
A. M.	1	30,100	79,0	17,7		Do.	Clear.
	2	30,085	79,7	17,7		Do.	Hazy.
	3	30,078	79,0	17,7		Lt. NW.	Do.
	4	30,070	78,2	13,5		Calm	Do. Dew.
	5	30,060	78,6	13,0		Do.	Clear: much Dew covering the whole of the ground.
	Mean	30,076	81,80	18,21			

TABLE I, *continued.*

DIARY FOR EVERY HOUR.

MARCH 1823.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
1823	H.	Inches.	°	°	°		
10th A. M.	6	30,009	81,0	17,0		Calm	Very Foggy.
	7	30,070	79,0	16,5		Do.	Foggy.
	8	30,008	80,5	15,5		Do.	Thin Haze.
	9	30,100	81,0	15,0		Do.	[illegible]
	10	30,115	81,0	14,8		SEy.	Clear.
	11	30,100	86,0	16,0		Do.	Do.
	Noon	30,100	87,0	16,4		Do.	Hazy.
P. M.	1	30,065	85,9	17,8		Do.	Do.
	2	30,062	81,8	16,0		SSW.	Rainy.
	3	30,045	80,8	16,8		SE.	Cloudy.
	4	30,035	82,0	17		SSW.	Mostly Hazy.
	5	30,022	84,0	17,5		SSE.	Clear.
	6	30,025	82,7	16,8		SE.	Do.
	7	30,005	82,0	16,0		SEy.	Do.
	8	30,015	81,0	16,0		Do.	Do.
	9	30,035	82,0	15,8		Do.	Do.
	10	30,038	81,8	16,0		Do.	Do.
	11	30,050	81,0	15,0		Do.	Do.
	Midnight	30,050	80,7	15,0		Do.	Do.
A. M.	1	30,065	79,8	14,5		Calm	Do.
	2	30,045	80,0	14,6		Do.	Do.
	3	30,025	78,8	14,5		Do.	Do.
	4	30,008	79,6	14,0		Do.	Do.
	5	30,000	78,8	14,0		Do.	Do.
	Mean	30,050	81,00	15,7			

PHASES of the MOON

for March 1823.

	D.	H.	M.	
Last Quarter	5	0	9	M
New Moon	12	11	35	A
First Quarter	19	11	39	A
Full Moon	26	11	9	A

The Moon had receded to the greatest distance, during the month, on the 5th.—The nearest approach of the Moon to the Earth this month, was on the 26th.

TABLE I, *continued.*

DIARY FOR EVERY HOUR.

MARCH 1823.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
	h.	Inches.	°	°	°		
19th	6	29,055	80,7	21,5		Calm	Clear : Dew.
20th A. M.	7	29,109	77,7	19,4		Do.	Clear.
	8	29,104	79,8	19,0		LtNWy.	Thin Haze.
	9	29,109	81,5	19,0		NWy.	Clear.
	10	29,122	82,0	19,4		sEy.	Hazy.
	11	29,129	80,9	21,0		Do.	Clear.
	Noon	29,130	80,2	22,0		Do.	Do.
P. M.	1	29,105	81,7	21,7		SE.	Do.
	2	29,090	80,2	22,4		Do.	Do.
	3	29,078	80,5	22,5		Do.	Do.
	4	29,075	80,0	23,0		Do.	Do.
	5	29,075	80,0	23,7		Do.	Do.
	6	29,077	83,4	24,0		Do.	Do.
	7	29,073	81,2	23,3		sEy.	Do.
	8	29,100	80,4	22,5		Do.	Clear and Dew.
	9	29,110	79,0	22,0		Ls. Ey.	Clear : Dew.
	10	29,109	79,0	21,5		Lt. sEy	Do. Do.
	11	29,118	79,3	21,0		Calm	Clear and Dew.
	Midnight	29,110	79,3	21,0		Do.	Clear : Dew.
21st A. M.	1	29,115	79,0	20,7		Do.	Clear mostly.
	2	29,090	75,0	20,0		Do.	Clear.
	3	29,080	73,2	19,8		Do.	Do.
	4	29,084	76,2	19,9		Do.	Clear: Dew accasional
	5	29,092	74,8	19,2		Do.	Tolerably Clear.
	Mean	29,099	80,94	21,10			

TABLE I. continued.

DIARY FOR EVERY HOUR.

MARCH 1823.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer.		Winds.	Weather.
				Dry.	Damp.		
1823	a.	Inches.	°	°			
20th A.M.	6	30,114	81,4	92,0		Calm	Clear.
	7	30,115	80,0	91		Do.	Do.
	8	30,108	87,5	90,5		Do.	Do.
	9	30,103	81,0	90,6		Do.	Hazy.
	10	30,108	80,7	91,8		SEy.	Clear.
	11	30,110	87,2	92,0		Do.	Do.
	Noon	30,110	80,0	92,0		Do.	Do.
P. M.	1	30,103	87,0	92,0		Do.	Do.
	2	30,098	85,0	92,0		SE.	Do.
	3	30,090	89,0	92,5		E by S	Do.
	4	30,094	87,0	92,4		SE.	Do.
	5	30,089	86,0	92,7		SSE.	Do.
	6	30,090	86,0	92,8		SE.	Mostly clear.
	7	30,087	84,0	91,8		SEy.	Clear.
	8	30,100	83,5	92,0		Do.	Do.
	9	30,114	82,0	91,7		Do.	Do.
	10	30,119	81,5	91,5		Do.	Do.
	11	30,109	81,0	91,5		Do.	Do.
	Midnight	30,119	81,0	90,5		Do.	Do.
A. M.	1	30,122	81,0	89,8		Ls. SE.	Do.
	2	30,109	80,0	89,0		Calm	Do.
	3	30,090	81,0	89,5		Do.	Do.
	4	30,096	80,0	89,0		Do.	Do.
	5	30,093	83,0	88,7		ESE.	Do.
	Mean	30,110	84,00	91,41			

TABLE I, *continued.*

DIARY FOR EVERY HOUR.

APRIL 1823.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
1823	H.	Inches.	°	°	°		
10th A. M.	6	30,001	89,5	22,5		Calm	Clear and Dew.
	7	30,010	82,0	23,4		SEy.	Clear.
	8	30,025	83,3	18,5		Do.	Do.
	9	30,029	86,0	18,5		Do.	Thin Haze.
	10	30,042	88,9	20,5		Do.	Clear.
	11	30,025	89,0	22,9		Do.	Do.
	Noon	30,032	90,0	23,0		Do.	Do.
P. M.	1	30,019	89,7	23,0		SSE.	Clear mostly.
	2	29,986	89,4	22,7		Fresh SEy.	Clear.
	3	29,976	88,0	22,0		Do. Do.	Do.
	4	29,979	88,4	22,0		Do. Do.	Do.
	5	29,979	87,5	21,2		S by W	Do.
	6	29,985	86,0	21,0		South	Do.
	7	29,968	84,0	21,5		Do.	Do.
	8	30,000	83,5	21,4		SEy.	Do.
	9	30,029	83,5	22,0		Do.	Clear: Dew.
	10	30,034	83,0	19,8		Do.	Do.
	11	30,039	83,0	18,5		Do.	Clear.
	Midnight	30,035	83,0	18,0		Do.	Do.
A. M.	1	30,035	81,7	18,0		Lt. SW.	Do.
	2	30,032	81,0	17,0		Do.	Do.
	3	29,983	80,7	17,0		SW.	Do.
	4	29,980	79,0	16,8		Do.	Do.
	5	29,975	78,8	16,5		Do.	Do.
	Mean	30,007	84,63	20,2			

PHASES *of the* MOON *for April* 1823.

	D.	H.	M.	
Last Quarter	3	8	31	A.
New Moon	11	0	9	A.
First Quarter	18	6	10	M.
Full Moon	25	0	20	A.

The nearest approach of the Moon to the Earth this month, was on the 14th.—The Moon had receded to the greatest distance, during the month, on the 30th.

TABLE I, *continued.*

DIARY FOR EVERY HOUR.

APRIL 1823.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
1823	H.	Inches.	°	°			
20th A. M.	6	29,974	83,5	18,9		SWy.	Clear.
	7	29,975	82,0	15,5		Do.	Do.
	8	30,000	86,0	17,5		SWy.	Do.
	9	30,007	89,0	21,2		Do.	Do.
	10	30,008	92,2	25,5		Do.	Do.
	11	30,000	95,2	28,5		Wy.	Do.
	Noon	30,000	92,5	26,0		SEy.	Do.
P. M.	1	29,965	91,5	25,5		Fresh Do.	Do.
	2	29,968	91,8	25,7		Do. SE.	Do.
	3	29,935	91,0	25,0		SE.	Clear & somewhat hazy.
	4	29,915	90,0	24,0		Do.	Clear.
	5	29,913	88,7	23,7		SE.	Do. mostly.
	6	29,912	87,7	23,5		SE. and [illegible]	Clear, Cloudy to the W.S.
	7	29,915	86,0	17,0		SEy.	Clear.
	8	29,932	83,2	15,8		Do.	Do.
	9	29,960	84,5	13,4		Do.	Do.
	10	29,965	84,0	13,0		Do.	Do.
	11	29,945	84,2	12,8		Do.	Do.
	Midnight	29,942	84,2	13,0		Do.	Do.
A. M.	1	29,942	84,0	13,5		SW.	Somewhat Hazy.
	2	29,940	83,5	15		SW.	Do. Do.
	3	29,945	82,5	16,0		SW.	Clear.
	4	29,940	81,5	16,0		SW.	Clear.
	5	29,942	81,7	15,5		Do.	Clear.
	Mean	29,955	86,6	19,15			

TABLE I, *continued.*

DIARY FOR EVERY HOUR.

APRIL 1823.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
1823	H.	Inches.	°	°			
30th A. M.	6	29,930	83,5	21,0		Lt. SWy.	Clear.
	7	29,938	83,6	18,5		Do.	Do.
	8	29,942	86,0	20,5		SWy.	Do.
	9	29,950	86,2	20		Do.	Do.
	10	29,954	89,0	21,5		Sy.	Do.
	11	29,960	89,5	21,6		Do.	Do.
	Noon	29,957	90,5	22,0		SEy.	Do.
P. M.	1	29,935	90,6	22,5		Do.	Do.
	2	29,937	90,5	22,5		SE.	Do.
	3	29,915	89,6	22,0		Do.	Do.
	4	29,888	89,4	22,0		Do.	Do.
	5	29,886	88,2	21,8		S Do.	Do.
	6	29,887	87,0	21,2		Do.	Do.
	7	29,910	86,0	21,8		SEy.	Do.
	8	29,930	85,2	21,0		Do.	Do.
	9	29,936	85,0	21,0		Do.	Do.
	10	29,960	85,5	20,7		Do.	Do.
	11	29,960	84,6	20,5		Do.	Do.
	Midnight	29,962	84,4	20,7		Do.	Do.
A. M.	1	29,974	83,2	19,0		SE.	Mostly clear and somewhat hazy during the hour.
	2	29,955	83,6	18,8		Wy.	Clear " "
	3	29,945	84,0	19,0		NW.	Clear " "
	4	29,944	82,2	19,0		Lt. NW.	Mostly clear " Hole cured the Horn.
	5	29,947	81,7	19,0		Lt. SW.	Clear.
	Mean	29,939	86,60	20,73			

TABLE I, *continued.*

DIARY FOR EVERY HOUR.

MAY 1823.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
1823	H.	Inches.	°	°	°		
10th A. M.	6	29,858	86,0	21,0		Land	Clear.
	7	29,904	88,5	21,8		Do.	Do.
	8	29,970	86,0	22,5		Calm	Hazy.
	9	29,972	88,2	23,2		Land	Clear.
	10	29,980	91,2	25,5		Do.	Do.
	11	29,978	94,0	30,5		Do.	Do.
	Noon	29,965	92,0	29,5		SE.	Do.
P. M.	1	29,945	92,5	29,0		Sea breeze at SE.	Do.
	2	29,942	90,5	27,4		SE.	Hazy.
	3	29,915	89,0	23,5		Do.	Somewhat Hazy.
	4	29,882	90,0	23,5		Do.	Clear.
	5	29,885	89,0	23,5		Do.	Clear; dark Clouds in the NW. quarter.
	6	29,885	88,0	23,8		Do.	Hazy, Do.
	7	29,910	87,5	23,5		SEy.	Clear
	8	29,932	88,2	23,0		Do.	Cloudy & lightning NWy.
	9	30,000	88,0	24,5		Do.	Do. Do.
	10	30,008	87,5	23,0		Do.	Do. Do.
	11	30,028	86,0	23,0		Fresh NW	Do. wind lightning all round.
	Midnight	30,020	85,2	21,5		Do. NWy	Do. Rain and Lightning
A. M.	1	30,005	85,0	24,0		NWy.	Do.
	2	29,965	81,8	23,8		Calm	Do. lightning in the SE. quarter.
	3	29,915	82,0	22,0		Do.	Cloudy.
	4	29,910	83,0	22		NW.	Do.
	5	29,912	83,4	22,5		North	Do.
	Mean	29,953	87,34	23,07			

Phases of the Moon for May 1823.

	D.	H.	M.	
Last Quarter	3	3	9	A
New Moon	13	9	24	A
First Quarter	17	0	13	A
Full Moon	25	2	18	M

The nearest approach of the Moon to the Earth this month, was on the 19th.—The Moon had receded to the greatest distance, during the month, on the 27th.

TABLE I. *continued.*

DIARY FOR EVERY HOUR.

MAY 1823.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
1823	H.	Inches.	°	°	°		
20th A. M.	6	29,955	85,0	22,0		SWy.	Thin Haze.
	7	29,904	83,3	20,7		Lt.SWy.	Clear.
	8	29,970	84,0	20,7		SWy.	Do.
	9	30,000	89,2	23,2		Do.	Do.
	10	30,004	91,5	23,4		Do.	Do.
	11	29,978	91,2	21,5		SEy.	Do.
	Noon	29,995	91,3	23,5		Do.	Do.
P. M.	1	29,965	91,4	20,0		Do.	Do.
	2	29,925	91,5	20,0		SE.	Do.
	3	29,935	90,5	23,8		Fresh SE.	Do.
	4	29,934	90,0	23,7		SE.	Do.
	5	29,927	88,8	23,0		Do.	Do.
	6	29,935	87,0	21,0		Do.	Do.
	7	29,936	86,2	22,2		SEy.	Do.
	8	29,915	85,5	22,7		Do.	Do.
	9	30,000	86,5	22,5		Do.	Do.
	10	30,002	86,2	22,0		Do.	Do.
	11	29,999	86,0	21,5		Do.	Do.
	Midnight	30,000	85,2	21,2		Calm	Do.
A. M.	1	29,982	85,2	21,0		Lt. SW.	Do.
	2	29,975	83,0	20,5		Do.	Do.
	3	29,978	83,2	20,5		Do.	Do.
	4	29,982	82,8	20,4		Calm	Do.
	5	29,983	81,8	20,0		Do.	Do.
	Mean	29,979	86,29	22,56			

TABLE I, *continued.*

DIARY FOR EVERY HOUR.

MAY 1823.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
1823	a.	Inches.	°	°			
30th A. M.	6	29,972	52,0	51,0		SWy.	Clear.
	7	29,980	52,5	52,0		Do.	Do.
	8	29,990	53,2	53,0		Do.	Do.
	9	29,999	55,0	53,0		Do.	Do.
	10	30,004	54,0	53,0		Do.	Do.
	11	30,000	53,0	51,7		Do.	Do.
	Noon	29,998	53,5	52,5		SEy.	Do.
P. M.	1	29,985	53,2	52,0		Do.	Do.
	2	29,985	53,2	52,5		SE.	Do.
	3	29,984	54,0	52,5		Do.	Do.
	4	29,980	54,5	52,5		Do.	Do.
	5	29,977	55,5	52,5		SSE.	Do.
	6	29,980	57,5	52,0		SE.	Do.
	7	29,980	56,2	52,5		SEy.	Do.
	8	29,975	55,5	52,0		Do.	Do.
	9	29,970	55,5	52,5		Do.	Do.
	10	29,968	55,0	52,5		Do.	Do.
	11	29,966	54,7	52,0		Do.	Do.
	Midnight	29,968	54,5	52,5		Do.	Do.
A. M.	1	29,956	54,0	52,0		SW.	Do.
	2	29,947	53,5	52,0		Do.	Do.
	3	29,940	53,5	52,0		SE.	Do.
	4	29,940	53,7	52,7		Do.	Do. Somewhat Hazy.
	5	29,940	53,7	52,1		Do.	Do.
	Mean	29,957	54,33	52,2			

TABLE I, *continued.*

DIARY FOR EVERY HOUR.

JUNE 1823.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
1823	H.	Inches.	°	°	°		
10th A. M.	6	29,865	85,5	33,0		SWy.	Clear.
	7	29,865	86,5	34,5		Wy.	Do.
	8	29,872	88,0	31,0		Do.	Hazy.
	9	29,900	90,0	35,5		Do.	Clear.
	10	29,918	91,2	36,0		Do.	Do.
	11	29,908	92,0	36,8		Do.	Do.
	Noon	29,900	91,0	37,0		Do.	Hazy.
P. M.	1	29,865	91,2	37,0		Lt. Wy.	Do.
	2	29,840	93,0	36,2		Easily	Cloudy.
	3	29,830	91,6	36,0		E by S	Do.
	4	29,825	92,7	35,5		SE.	Do. and Hazy.
	5	29,816	91,5	35,0		Do.	Cloudy.
	6	29,825	91,4	34,5		Do.	Do.
	7	29,818	91,0	33,2		SEy.	Do.
	8	29,834	91,0	35,0		Do.	Do.
	9	29,828	89,5	34,8		NWy.	Flying Clouds.
	10	29,855	89,4	34,2		NWy.	Hazy.
	11	29,870	89,0	34,0		SEy.	Cloudy.
	Midnight	29,855	89,0	35,5		Fresh NWy.	Do.
A. M.	1	29,855	88,0	35,6		Do.	Do.
	2	29,847	87,4	35,5		Do.	Do.
	3	29,835	86,2	35,4		SW.	Hazy.
	4	29,852	85,2	35,5		Fresh SW.	Do.
	5	29,857	85,7	35,6		Do.	Clear.
	Mean	29,855	90,17	35,34			

Phases of the Moon *for June 1823.*

	H.	M.	S.	
Last Quarter	2	0	43	M.
New Moon	9	5	0	M.
First Quarter	15	8	44	A.
Full Moon	23	5	24	A.

The nearest approach of the Moon to the Earth this month, was on the 8th.—The Moon had receded to the greatest distance, during the month, on the 24th.

TABLE I, *continued.*

DIARY FOR EVERY HOUR.

JUNE 1823.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
	H.	Inches.	°	°	°		
1823 [illegible] A. M.	6	29,930	86,0	34,0		Wy.	Thin Haze.
	7	29,925	87,5	34,5		SWy.	Hazy.
	8	29,920	89,4	35,2		Do.	Do.
	9	29,918	90,2	35,8		Do.	Do.
	10	29,972	94,2	36,2		Do.	Clear.
	11	29,915	93,3	37,2		Do.	Do.
	Noon	29,960	96,0	37,0		SEy.	Do.
P. M.	1	29,945	95,0	36,5		Ey.	Do.
	2	29,925	94,0	36,5		SE.	Hazy.
	3	29,918	93,8	36,6		Do.	Somewhat Hazy.
	4	29,912	92,2	35,4		Do.	Do. Do.
	5	29,905	89,7	33,0		Do.	Clear.
	6	29,891	88,5	32,5		Do.	Do.
	7	29,900	88,0	32,0		SEy.	Do.
	8	29,940	87,9	31,5		Do.	Do.
	9	29,945	87,0	31,0		Do.	Do.
	10	29,972	86,5	30,0		Do.	Do.
	11	29,990	86,0	30,0		Do.	Do.
	Midnight	30,000	86,5	30,0		Do.	Do.
A. M.	1	29,927	85,7	28,7		SE.	Do.
	2	29,965	86,0	29,5		S by W.	Do.
	3	29,945	84,5	31,0		Calm	Clear; Minor Lightning in the Northwest.
	4	29,912	83,0	31,2		Do.	Do. Do.
	5	29,913	83,0	31,5		Do.	Do. Do.
	Mean	29,945	88,88	33,16			

TABLE I. *continued.*

DIARY FOR EVERY HOUR.

JUNE 1823.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer.		Winds.	Weather.
				Dry.	Damp.		
1823	h.	Inches.	°	°	°		
30th A. M.	6	29,958	84,5	30,0		Wy.	Hazy.
	7	29,969	87,0	30,4		Lt. Wy.	Do.
	8	29,958	84,8	30,5		SWy.	Thick Haze.
	9	29,963	86,0	33,2		Do.	Do. Do.
	10	29,969	87,0	33,9		Do.	Hazy.
	11	29,965	88,8	34,6		Do.	Thic Haze.
	Noon	29,964	89,8	35,0		Do.	Hazy.
P. M.	1	29,958	91,0	36,8		Do.	Do.
	2	29,953	91,8	37,0		SW.	Do.
	3	29,892	91,0	36,9		Do.	Do.
	4	29,873	91,8	36,0		Do.	Do.
	5	29,873	91,7	36,8		Lt. Wy.	Do.
	6	29,874	91,7	36,5		Lt. wwy.	Thick Haze.
	7	29,909	90,2	36,0		Calm	Cloudy.
	8	29,935	89,3	36,8		Lt. NEy.	Do.
	9	29,949	86,5	36,0		NEy.	Do.
	10	29,959	86,0	36,0		Do.	Thick Haze.
	11	29,959	86,2	36,0		Do.	Cloudy.
	Midnight	29,959	85,0	36,0		Do.	Do.
A. M.	1	29,955	84,5	35,5		SW.	Hazy.
	2	29,953	84,7	34,9		Do.	Clear.
	3	29,953	84,7	35,9		Do.	Do.
	4	29,958	84,7	35,0		Lt. W.	Do.
	5	29,951	84,0	34,8		Do. SW	Do.
	Mean	29,910	87,68	34,7			

TABLE I, *continued.*

DIARY FOR EVERY HOUR.

JULY 1823.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
1823	h.	Inches.	°	°	°		
18th A. M.	6	29,857	84,0	43,0		Wy.	Hazy.
	7	29,858	82,4	43,0		SWy.	Do.
	8	29,865	85,0	43,4		Do.	Do.
	9	29,903	86,0	44,5		Do.	Do.
	10	29,915	87,5	44,0		Do.	Thin Haze.
	11	29,902	89,0	41,2		Do.	Hazy.
	Noon	29,898	89,3	50,0		Do.	Do.
P. M.	1	29,865	91,2	51,5		Wy.	Do.
	2	29,862	91,0	51,8		SWy.	Do.
	3	29,816	89,2	50,0		SEy.	Thin Haze.
	4	29,833	88,2	50,0		Do.	Hazy.
	5	29,818	87,2	50,0		Do.	Do.
	6	29,817	86,0	48,5		Do.	Do.
	7	29,829	83,0	47,0		South Ely.	Do.
	8	29,848	80,0	46,8		SEy.	Thin Haze.
	9	29,863	85,0	46,3		Do.	Hazy.
	10	29,817	84,8	45,0		Do.	Cloudy.
	11	29,8[illegible]	84,0	44,5		Do.	Do.
	Midnight	29,824	83,2	44,0		Do.	Do.
A. M.	1	29,845	84,0	44,0		Do.	Do.
	2	29,830	84,8	47,8		NWy.	Do.
	3	29,832	84,0	47,7		Do.	Do.
	4	29,849	86,0	50,0		Wy.	Do.
	5	29,855	84,0	49,5		NWy.	Do.
	Mean	29,828	86,24	46,94			

Phases of the Moon for July 1823.

	h.	m.	s.
Last Quarter	1	6	37 A.
New Moon	8	0	1 A.
First Quarter	15	6	42 M.
Full Moon	23	8	43 M.
Last Quarter	31	6	11 E.

The nearest approach of the Moon to the Earth this month, was on the 7th.—The Moon had receded to the greatest distance, during the month, on the 21st.

TABLE I. continued.

DIARY FOR EVERY HOUR.

JULY 1823.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
	h.	Inches.	°	°	°		
10th A. M.	6	29,897	57,5	50,0		W.	Hazy.
	7	29,900	57,8	50,5		Do.	Clear.
	8	29,905	58,0	50,6		Do.	Do.
	9	29,910	58,2	50,0		Do.	Do.
	10	29,910	51,0	42,5		Do.	Do.
	11	29,915	59,0	44,0		Do.	Do.
	Noon	29,900	58,6	45,0		Do.	Thin Haze.
P. M.	1	29,905	59,3	46,0		NWy.	Clear.
	2	29,885	57,0	48,2		NW	Do.
	3	29,855	59,0	47,0		W	Flying Clouds.
	4	29,850	57,4	45,0		Wy.	Do.
	5	29,895	57,9	49,0		NW.	Do.
	6	29,899	56,8	41,8		Lt. NE.	Hazy.
	7	29,979	55,9	43,5		SEy.	Do.
	8	29,900	55,3	48,0		Do.	Cloudy.
	9	29,900	57,0	48,0		Fresh Sly.	Do.
	10	29,903	56,5	48,2		SEy.	Do.
	11	29,910	57,0	45,0		Do.	Do.
	Midnight	29,915	57,2	50,0		Do.	Flying Clouds.
A. M.	1	29,900	56,0	52,0		SSW.	Clear.
	2	29,895	55,2	52,5		Do.	Do.
	3	29,882	56,0	50,2		SW.	Do.
	4	29,878	56,0	50,2		W.	Do.
	5	29,877	56,4	50,2		Lt. SW.	Do.
	Mean	29,979	56,16	41,58			

TABLE I, *continued.*

DIARY FOR EVERY HOUR.

JULY 1823.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
1823	H.	Inches.	°	°	°		
30th A. M.	6	29,893	83,0	38,0		Lt. SWy.	Cloudy.
	7	29,820	82,8	38,0		Do.	Do.
	8	29,812	83,2	38,0		Do.	Do.
	9	29,818	83,5	39,5		SWy.	Thick Hazy.
	10	29,850	86,2	40,0		Do.	Hazy.
	11	29,855	88,2	42,0		NWy.	Clear.
	Noon	29,842	89,5	43,0		Do.	Do.
P. M.	1	29,840	90,3	44,0		Do.	Do.
	2	29,825	91,7	44,7		NW.	Do.
	3	29,825	92,0	44,0		SE.	Do.
	4	29,795	91,0	45,5		Do.	Do.
	5	29,795	88,4	44,0		Do.	Do.
	6	29,795	87,0	43,0		SE.	Do.
	7	29,800	86,0	42,2		SEy.	Do.
	8	29,812	85,8	42,2		Do.	Do.
	9	29,818	86,2	42,0		SEy.	Mostly clear. Lightning
	10	29,838	86,0	40,0		SEy.	Clear; Do.
	11	29,840	86,0	40,0		Do.	Clear.
	Midnight	29,849	85,4	39,6		Do.	Do.
A. M.	1	29,850	85,0	39,0		S by W.	Do.
	2	29,854	84,0	39,0		Do.	Do.
	3	29,863	82,0	38,0		Do.	Do.
	4	29,845	81,5	39,5		Lt. SW.	Do.
	5	29,855	80,7	38,0		Lt. SW.	Do.
	Mean	29,833	86,18	41,00			

TABLE I. *continued.*

DIARY FOR EVERY HOUR.

AUGUST 1825.

Day of the Month.	Hour.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds	Weather.
1825	a.	Inches.	°	°	°		
16th A. M.	6	29,909	84,0	57,0		W y.	Hazy.
	7	29,915	84,0	57,0		Do.	Do.
	8	29,928	84,6	57,0		Do.	Do.
	9	29,938	86,5	59,0		SWy.	Thin Haze.
	10	29,940	86,5	59,0		Do.	Hazy.
	11	29,938	89,2	60,0		Do.	Do.
	Noon	29,939	91,2	60,0		Do.	Do.
P. M.	1	29,935	91,0	60,0		Do.	Do.
	2	29,933	93,0	44,0		SW.	Do.
	3	29,879	93,4	45,5		Do.	Thick Do.
	4	29,878	92,8	45,5		Do.	Do.
	5	29,903	90,5	45,5		SE.	Cloudy.
	6	29,904	87,4	41,5		Do.	Do.
	7	29,919	86,5	40,7		SEy.	Do.
	8	29,932	87,0	41,0		Do.	Do.
	9	29,937	86,4	41,0		Do.	Do.
	10	29,918	86,0	42,0		Do.	Do.
	11	29,908	86,0	43,0		Ll. SEy.	Do.
	Midnight	29,909	86,7	44,5		Calm	Clear.
A. M.	1	29,914	85,4	46,7		Do.	Cloudy.
	2	29,910	84,8	44		Do.	Do.
	3	29,886	83,7	45,0		Do.	Hazy.
	4	29,905	83,5	44,5		SW.	Do.
	5	29,913	83,0	45,7		Ll. SW.	Do.
	Mean	29,908	87,11	47,4			

Passes of the Moon for August 1825.

	h.	m.	s.	
New Moon	6	7	14	A
First Quarter	13	7	41	A
Full Moon	22	9	9	M
Last Quarter	29	11	28	M

The nearest approach of the Moon to the Earth this month, was on the 8th.—The Moon had receded to the greatest distance, during the month, on the 28th.

TABLE I, *continued.*

DIARY FOR EVERY HOUR.

AUGUST 1823.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
1823	H.	Inches.	°	°	°		
11th A. M.	6	29,915	87,5	2,0		SW.	Clear.
	7	29,912	83,2	1,6		Do.	Do.
	8	29,939	80,9	1,0		Do.	Do.
	9	29,918	87,0	3,5		Do.	Do.
	10	29,907	89,2	7,4		Do.	Do.
	11	29,915	90,2	8,0		Do.	Do.
	Noon	29,938	92,4	10,2		NWy.	Do.
P. M.	1	29,915	93,0	8,3		Easterly.	Do.
	2	29,872	91,0	9,0		Do.	Do.
	3	29,865	91,8	8,0		SE.	Do.
	4	29,915	91,9	7,5		Do.	Mostly Clear.
	5	29,915	90,0	7,5		Lt. SE.	Generally Do.
	6	29,810	85,5	7,0		SE.	Do. Do.
	7	29,837	86,8	5,8		SEy.	Clear.
	8	29,900	87,0	6,2		Do.	Hazy.
	9	29,939	86,9	3,3		Do.	Do.
	10	29,918	86,2	3,0		Do.	Cloudy.
	11	29,919	84,0	4,5		Do.	Do.
	Midnight	29,930	84,0	3,9		Fresh Ly.	Do.
A. M.	1	29,900	81,0	6,2		Fresh Ly.	Do. Rain and Lightning
	2	29,900	80,0	4,0		SE.	Cloudy.
	3	29,900	79,8	1,4		SW.	Do.
	4	29,915	79,7	0,5		Do.	Do.
	5	29,910	79,8	0,9		Do.	Some Rain.
	Mean	29,900	86,35	5,20			

TABLE I, continued.

DIARY FOR EVERY HOUR.

AUGUST 1822.

Day of the Month.	Hours.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
1822	a.	Inches.	°	°	°		
20th A. M.	6	29,709	80,0	45,0		Calm.	Heavy Rain.
	7	29,715	79,5	42,0		SWy.	Cloudy and Rain.
	8	29,720	79,2	38,0		Do.	Do. and some Do.
	9	29,814	78,0	35,5		Do.	Do. Do.
	10	29,950	78,0	34,0		Do.	Do. & Do.
	11	29,997	78,0	31,0		Do.	Do. Do.
	Noon	29,878	77,8	30,0		Do.	Do. Do.
P. M.	1	29,864	79,0	28,5		Do.	Rain.
	2	29,864	79,0	27,5		Wy.	Cloudy.
	3	29,879	80,0	25,0		NWy.	Do.
	4	29,878	80,0	26,5		NW.	Do.
	5	29,898	80,5	31,0		Do.	Do.
	6	29,919	80,5	32,0		Do.	Do.
	7	29,878	80,0		5,0	Wy.	Hazy.
	8	29,909	80,1		4,0	Do.	Do.
	9	29,922	80,4		4,0	Ly. Wy.	Cloudy.
	10	29,926	80,8		3,0	Calm.	Do.
	11	29,940	81,0		2,0	Do.	Do. and Rain.
	Midnight	29,949	79,0		2,0	SWy.	Cloudy.
A. M.	1	29,959	79,0		3,0	Do.	Do.
	2	29,969	79,0		4	SW.	Do.
	3	29,979	79,0		4,0	Calm.	Do.
	4	29,999	79,0		4,0	Ly. SW	Do.
	5	29,994	79,0		4,0	SW.	Do.
	Mean	29,913	79,83	27,25			

TABLE I, continued.

DIARY FOR EVERY HOUR.

SEPTEMBER 1823.

Day of the month.	Time.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
1823	H.	Inches.	°	°	°		
10th A. M.	6	29,903	82,0	31,0		SWy.	Cloudy.
	7	29,908	81,0	33,0		Do.	Thin Haze.
	8	29,915	82,5	28,0		Do.	Hazy.
	9	29,906	84,2	34,7		Do.	Do.
	10	29,940	85,4	36,0		E. SWy	Clear.
	11	29,932	86,0	38,0		Do.	Hazy.
	Noon	29,925	88,0	38,0		SWy.	Do.
P. M.	1	29,920	89,0	39,0		NW.	Cloudy.
	2	29,890	89,0	40,0		NW.	Do.
	3	29,874	88,5	39,5		SW.	Do.
	4	29,865	87,8	39,0		Do.	Do.
	5	29,874	86,2	38,0		Do.	Dark and Hazy.
	6	29,870	85,0	38,5		Do.	Do. Do.
	7	29,888	85,0	39,0		Do.	Hazy.
	8	29,910	84,4	39,7		NWy.	Cloudy.
	9	29,928	84,8	38,8		NEy.	Do.
	10	29,942	84,2	40,0		Lt. NEy	Do.
	11	29,950	83,5	39,8		SEy.	Clear.
	Midnight	29,944	82,0	36,0		Do.	Do.
A. M.	1	29,945	81,0	35,0		SSW.	Cloudy.
	2	29,930	81,0	33,5		Do.	Clear.
	3	29,925	80,5	33,8		SW.	Do.
	4	29,935	80,4	37,0		Do.	Do.
	5	29,925	80,0	33,5		Do.	Do.
	Mean	29,915	84,24	36,88			

PHASES of the MOON

for September 1823.

	D.	H.	M.	
New Moon	5	3	10	M.
First Quarter	12	0	6	A.
Full Moon	20	2	22	A.
Last Quarter	27	6	17	A.

The nearest approach of the Moon to the Earth this month, was on the 3d.—The Moon had receded to the greatest distance, during the month, on the 15th.

TABLE I, *continued.*

DIARY FOR EVERY HOUR,

SEPTEMBER 1823.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
1823	H.	Inches.	°	°	°		
20th A. M.	6	29,929	82,8	29,9		SWy.	Hazy.
	7	29,928	83,0	27,0		Do.	Do.
	8	29,927	84,0	27,5		Do.	Do.
	9	29,928	85,4	28,0		Do.	Do.
	10	29,930	87,0	29,0		Do.	Do.
	11	29,975	88,0	29,5		Do.	Do.
	Noon	29,955	89,0	30,0		Do.	This Haze.
P. M.	1	29,925	83,8	31,0		SW.	Hazy.
	2	29,915	82,4	31,4		NW.	Cloudy.
	3	29,935	85,0	30,0		East	Do.
	4	29,935	85,0	28,5		South	Rainy.
	5	29,935	84,5	27,5		Calm	Cloudy.
	6	29,935	85,0	26,0		Do.	Do.
	7	29,912	82,8	25,9		Lt. Ey.	Do.
	8	29,925	84,0	24,9		Calm	Do.
	9	29,936	82,5	23,6		Lt. SEy.	Do.
	10	29,935	83,0	23,9		SEy.	Hazy.
	11	29,932	83,4	23,5		Do.	Cloudy.
	Midnight	29,935	83,0	23,8		Do.	Do.
A. M.	1	29,935	82,4	22,0		South	Rain.
	2	29,945	81,0	22,5		S by W.	Some Rain.
	3	29,942	80,5	22,2		SE.	Cloudy & Thunder.
	4	29,938	80,0	22,0		SW.	Cloudy.
	5	29,945	80,4	21,5		Lt. SW.	Do.
	Mean	29,928	84,10	26,10			

TABLE I, *continued.*

DIARY FOR EVERY HOUR.

SEPTEMBER 1823.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
1823	H.	Inches.	°	°	°		
5th A. M.	6	30,000	84,6	33,0		Wy.	Hazy.
	7	30,014	84,2	33,0		SWy.	Do.
	8	30,015	84,8	33,0		Do.	Do.
	9	30,020	87,2	35,8		Do.	Clear.
	10	30,025	89,0	37,5		Do.	Do.
	11	30,030	91,0	40,0		Do.	Do.
	Noon	30,008	92,5	40,5		Do.	Hazy.
P. M.	1	29,975	92,5	45,7		Lt. SW.	Cloudy.
	2	29,945	92,7	45,8		SE.	Do.
	3	29,935	87,5	39,0		Do.	Do.
	4	29,932	86,5	36,8		Do.	Do.
	5	29,925	86,2	35,8		Do.	Hazy and near Rain.
	6	29,922	85,6	35,0		Do.	Hazy.
	7	29,932	85,0	35,8		SEy.	Hazy; Lightning SWy.
	8	29,950	85,0	35,0		Do.	Do. Do.
	9	29,998	85,8	36,0		Do.	Cloudy, Do. Do.
	10	30,000	83,2	36,0		From SEy.	Do. & Lightning.
	11	30,045	80,0	37,5		Do. SWy.	Heavy Rain, Thunder and Lightning.
	Midnight	29,955	83,0	37,0		NWy.	Rain, Dark, Cloudy.
A. M.	1	29,948	83,5	37,0		Do.	Rain, Do. Do.
	2	30,010	83,0	37,0		Do.	Rain, Do. Do.
	3	29,965	83,0	37,0		W.	Rain.
	4	29,983	79,0	36,0		W.	Cloudy.
	5	29,980	79,4	35		SW.	Do.
	Mean	29,982	83,65	37,01			

TABLE I, *continued.*

DIARY FOR EVERY HOUR.

OCTOBER 1823.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
1823	H.	Inches.	°	°	°		
10th A. M.	6	30,015	84,4	35		Calm.	Clear; Dew at Night.
	7	30,035	83,1	31,0		Light SWy.	Clear.
	8	30,022	84,9	32,0		SWy.	Do.
	9	30,028	85,9	33,2*		Do.	Do.
	10	30,030	89,0	36,0		Do.	Do.
	11	30,025	91,2	37,0		Do.	Do.
	Noon	30,015	89,9	39,0		Do.	Hazy.
P. M.	1	29,982	92,0	38,0		SE.	Clear.
	2	29,985	91,8	37,0		Do.	Do.
	3	29,955	91,0	39,0		Do.	Do.
	4	29,956	89,5	37,0		Do.	Do.
	5	29,947	88,0	34,5		Do.	Do.
	6	29,945	86,7	34,0		Ll. SE.	Do.
	7	29,952	85,0	31,0		SEy.	Do.
	8	30,000	85,5	33,5		Do.	Do.
	9	30,018	85,4	32,0		Do.	Do.
	10	30,020	85,2	33,0		Do.	Do.
	11	30,015	83,8	33,0		Ll. SEy.	Thin Haze & Lightning.
	Midnight	30,012	83,2	33,2		Calm.	Clear and wind lightning S. W. quarter.
A. M.	1	30,022	83,0	33		Do.	Clear.
	2	30,010	83,0	32,0		Do.	Do.
	3	29,983	81,0	32,0		Do.	Do.
	4	29,983	80,8	31,7		Do.	Do.
	5	29,984	80,0	31,5		Do.	Do.
	Mean	29,996	85,50	34,31			

PHASES *of the* MOON *for October* 1823.

	D.	H.	M.	
New Moon	4	2	9	A.
First Quarter	12	7	28	M.
Full Moon	20	3	32	M.
Last Quarter	27	1	5	M.

The Moon had receded to the greatest distance, during the month, on the 19th.—The nearest approach of the Moon to the Earth this month, was on the 24th.

TABLE I. continued.

DIARY FOR EVERY HOUR.

OCTOBER 1823.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
19th	h.	Inches.	-	-	-		
19th A. M.	6	30,020	71,0	35,8		Calm	Clear & Dew.
	7	30,047	76,0	35,0		Ba.	Clear.
	8	30,038	82,0	39,8		Da.	Da.
	9	30,006	85,0	38,0		SEy.	Da.
	10	30,010	87,3	37,0		Da.	Da.
	11	30,000	89,0	36,0		Da.	Da.
	Noon	29,978	89,0	36,0		Da.	Da.
P. M.	1	29,978	91,0	36,0		SE.	Da.
	2	30,037	90,5	36,5		Da.	Da.
	3	29,949	91,0	37,5		Da.	Da.
	4	29,943	89,0	34,5		Da.	Da.
	5	30,000	88,0	35,0		Ll. Da.	Da.
	6	30,025	86,5	34,5		SEy.	Da.
	7	30,049	84,8	34,0		Da.	Hazy.
	8	30,060	83,0	34,0		Da.	Clear.
	9	30,080	81,5	34,0		Da.	Da.
	10	30,100	80,5	33,5		Da.	Da.
	11	30,095	80,0	33,5		Ll. Da.	Da.
	Midnight	30,098	80,5	34,5		Calm	Da.
A. M.	1	30,080	80,0	34,0		Da.	Da.
	2	30,080	80,5	34,2		Da.	Da.
	3	30,090	79,8	34,0		Da.	Da.
	4	30,073	79,8	34,0		SW.	Da.
	5	30,057	77,0	35,0		Da.	Hazy.
	Mean	30,016	84,71	35,84			

TABLE I, continued.

DIARY FOR EVERY HOUR.

OCTOBER 1823.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer.		Winds.	Weather.
				Dry.	Damp.		
1823	h.	Inches.	°	°	°		
30th A. M.	8	29,918	80,0	17,0		NEy.	Cloudy.
	7	29,976	79,0	16,5		Do.	Flying Clouds.
	8	30,000	79,2	14,0		Do.	Cloudy.
	9	30,013	79,5	13,9		Do.	Do. & some Rain
	10	30,016	78,2	17,0		Do.	Rain.
	11	30,009	79,3	6,5		Do.	Do.
	Noon	30,018	80,0		7,5	Do.	Do.
P. M.	1	30,000	79,0		5,8	NE.	Cloudy.
	2	29,977	78,8		1,5	Do.	Rainy.
	3	29,973	78,8		3,0	Do.	Do.
	4	29,980	78,0		1,0	Do.	Cloudy, dark.
	5	29,975	77,0		2,5	Do.	Very dark. Cloudy & Rain.
	6	29,980	76,0		2,4	Do.	Do. Do.
	7	30,000	77,0		1,0	NEy.	Cloudy.
	8	29,995	77,5	1,5		Do.	Rain.
	9	29,990	77,6	0,5		Do.	Heavy Rain.
	10	30,000	77,8	0,3		Do.	Do.
	11	30,009	77,5	1,0		Do.	Do.
	Midnight	29,997	77,5	1,0		Do.	Do.
A. M.	1	30,000	77,1	1,0		Do.	Rain.
	2	30,000	77,0	1,0		Do.	Cloudy.
	3	29,973	76,8	0,2		From NE.	Heavy Rain.
	4	29,967	75,5	0,5	0,5	NE.	Rain.
	5	29,960	75,5		0,1	North	Do.
	Mean	29,997	78,09	2,89			

TABLE I, *continued.*

DIARY FOR EVERY HOUR.

NOVEMBER 1823.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
1823	H.	Inches.	°	°	°		
10th A. M.	6	30,055	78,0	25,5		Lt. NEy	Clear and Dew.
	7	30,062	78,0	24,0		NEy.	Clear.
	8	30,072	77,7	23,0		Do.	Do.
	9	30,100	79,5	23,5		Do.	Do.
	10	30,110	82,0	22,0		Do.	Do.
	11	30,100	84,0	22,5		Do.	Do.
	Noon	30,100	84,0	21,5		Do.	Do.
P. M.	1	30,047	83,5	21,7		NE.	Do.
	2	30,028	86,0	23,0		Do.	Do.
	3	30,025	85,5	24,0		Do.	Do.
	4	30,032	83,0	24,0		Do.	Do.
	5	30,025	83,5	22,0		Do.	Do.
	6	30,027	81,0	21,5		Do.	Do.
	7	30,018	79,4	21,0		NEy.	Clear and Dew.
	8	30,022	79,0	20,2		Do.	Do. Do.
	9	30,020	78,5	19,0		Do.	Do. Do.
	10	30,025	78,5	19,0		Do.	Do. Do.
	11	30,040	76,5	18,0		Calm	Do. Do.
	Midnight	30,038	74,2	18,0		Do.	Do. Do.
A. M.	1	30,044	76,5	17,5		Do.	Mostly Clear.
	2	30,047	76,7	17,5		Do.	Clear.
	3	30,040	76,0	17,0		Do.	Do.
	4	30,030	74,2	17,5		Do.	Clear - Dew.
	5	30,005	73,9	17,2		Lt. NW	Do. Do.
	Mean	30,013	79,65	18,58			

PHASES of the MOON for November 1823.

	D.	H.	M.
New Moon	3	3	1 M.
First Quarter	11	4	12 M.
Full Moon	18	3	42 A.
Last Quarter	25	8	34 M.

The Moon had receded to the greatest distance, during the month, on the 8th.—The nearest approach of the Moon to the Earth this month, was on the 20th.

TABLE I, *continued.*

DIARY FOR EVERY HOUR.

NOVEMBER 1823.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer.		Winds.	Weather.
				Dry.	Damp.		
10th	a.	Inches.	°	°	°		
this A. M.	6	30,150	78,0	20,5		Calm.	Hazy.
	7	30,150	77,8	20,0		N Ey.	Thin Haze.
	8	30,000	80,8	17,3		Do.	Flying Clouds.
	9	30,010	83,5	19,8		Do.	Hazy.
	10	30,000	86,0	20,3		Do.	Do.
	11	30,010	87,0	21,5		Do.	Do.
	Noon	30,000	81,0	22,0		Do.	Cloudy.
P. M.	1	30,000	83,5	20,3		Lt. Ey.	Do.
	2	30,183	80,7	20,0		NE.	Flying Clouds.
	3	30,177	81,5	23,0		Do.	Clear.
	4	30,187	84,3	23,5		Do.	Do.
	5	30,170	83,9	23,4		Lt. NE.	Somewhat Hazy.
	6	30,174	82,5	23,0		NE.	Clear.
	7	30,175	80,0	23,0		Lt. NEy.	Flying Clouds.
	8	30,000	80,0	27,0		NEy.	Cloudy.
	9	30,000	80,0	20,0		Do.	Flying Clouds.
	10	30,020	81,5	20,4		Do.	Thin Haze.
	11	30,000	81,7	20,0		Do.	Hazy.
	Midnight	30,010	80,5	20,0		Lt. Do.	Clear and Dew.
A. M.	1	30,015	81,0	27,5		Lt. NE.	Cloudy.
	2	30,015	81,0	23,0		NW.	Flying Clouds.
	3	30,015	80,0	20,5		Lt. NW	Do. Do.
	4	30,020	79,5	20,0		Do.	Clear.
	5	30,050	79,0	21,0		Do.	Hazy.
	Mean	30,000	80,75	21,84			

TABLE I, continued.

DIARY FOR EVERY HOUR.

NOVEMBER 1823.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
1823	H.	Inches.	°	°	°		
30th A. M.	6	30,200	73,0	33,4		Lt. NEy	Clear.
	7	30,220	75,0	32,4		NEy.	Do.
	8	30,230	76,4	32,4		Do.	Do.
	9	30,240	80,2	33,3		Do.	Do.
	10	30,250	82,4	35,2		Do.	Flying Clouds.
	11	30,252	84,0	36,8		From NE	Do.
	Noon	30,248	85,8	37,7		Do.	Clear.
P. M.	1	30,225	85,0	38,0		NEy.	Thin Haze.
	2	30,212	84,5	39,0		NE.	Clear.
	3	30,175	82,8	38,5		Do.	Do.
	4	30,200	82,5	38,0		Do.	Do.
	5	30,180	81,5	37,7		Do.	Do.
	6	30,150	79,5	37,7		Do.	Do.
	7	30,200	78,2	37,8		Do.	Do.
	8	30,222	77,2	37,0		NEy.	Clear & Dew.
	9	30,230	77,8	37,0		Lt. NEy.	Do. Do.
	10	30,234	78,0	37,0		Calm	Do. Do.
	11	30,235	77,0	37,0		Do.	Do. Do.
	Midnight.	30,230	76,0	36,0		Do.	Do. Do.
A. M.	1	30,245	75,0	36,5		Do.	Clear.
	2	30,242	74,8	36,0		Do.	Do.
	3	30,227	74,4	35,5		Do.	Do.
	4	30,225	74,5	34,7		Do.	Do.
	5	30,227	74,0	34,5		Do.	Do.
	Mean	30,223	78,77	36,22			

TABLE I, *continued.*

DIARY FOR EVERY HOUR.

DECEMBER 1822.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
1823	h.	Inches.	°	°	°		
10th A. M.	6	30,[illegible]	74,2	31,0		Lt. NE.	Cloudy.
	7	30,[illegible]	74,4	31,0		Do. Do.	Flying Clouds.
	8	30,[illegible]	74,8	31,1		Do. Do.	Do.
	9	30,[illegible]	78,5	32,0		NE.	Do.
	10	30,[illegible]	80,0	32,5		Do.	Do.
	11	30,[illegible]	81,2	34,0		Do.	Do.
	Noon	30,[illegible]	80,5	34,8		Do.	Do.
P. M.	1	30,215	81,2	35,0		Do.	Clear.
	2	30,[illegible]	81,0	35,0		Do.	Do.
	3	30,[illegible]	82,0	36,5		Do.	Do.
	4	30,[illegible]	80,0	36,5		Do.	Do.
	5	30,[illegible]	80,8	36,5		Do.	Do.
	6	30,[illegible]	79,5	35,2		Do.	Cloudy.
	7	30,[illegible]	78,5	36,0		Lt. NE.	Flying Clouds.
	8	30,[illegible]	78,2	36,0		Do. Do.	Do.
	9	30,[illegible]	77,7	34,5		Do. Do.	Clear.
	10	30,[illegible]	76,5	34,0		Do. Do.	Do.
	11	,[illegible]	76,0	33,8		Calm	Do.
	Midnight	,214	76,8	34,0		Do.	Do.
A. M.	1	,[illegible]	74,8	33,8		Do.	Do.
	2	,[illegible]	74,3	32,7		Lt. Ny.	Do.
	3	,[illegible]	73,4	32,5		Do. Do.	Flying Clouds.
	4	,[illegible]	73,6	32,8		Calm	Clear.
	5	30,[illegible]	73,0	32,7		NE.	Do.
	Mean	30,[illegible]	78,2	33,[illegible]			

Phases of the Moon for December 1823.

	D.	H.	M.	
New Moon	2	6	57	A
First Quarter	11	9	17	M
Full Moon	18	3	11	M
Last Quarter	24	8	39	A

The Moon had wrinkled in the greatest distance during the month on the 6th.—The nearest approach of the Moon to the Earth this month, was on the 15th.

TABLE I, *continued.*

DIARY FOR EVERY HOUR.

OCTOBER 1823.

Day of the Month.	Hour.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Wind.	Weather.
17th	a.	Inches.	°	°			
18th A. M.	6	30,378	50,0	45,0		N. NEy.	Clear and Dew.
	7	30,380	54,0	47,5		NEy.	Clear.
	8	30,380	54,0	46,0		Do.	Do.
	9	30,368	70,0	48,0		Do.	Do.
	10	30,350	83,0	47,0		Do.	Do.
	11	30,275	84,0	46,0		Do.	Do.
	Noon	30,270	85,0	47,0		Do.	Do.
P. M.	1	30,225	85,0	46,5		NE.	Do.
	2	30,198	85,5	47,0		Do.	Do.
	3	30,160	85,5	46,0		Do.	Do.
	4	30,145	84,0	46,5		Do.	Do.
	5	30,145	84,0	46,0		ENE.	Mostly Clear.
	6	30,147	80,0	46,0		NE.	Clear.
	7	30,160	70,0	45,5		NEy.	Do.
	8	30,178	70,0	45,0		Do.	Do.
	9	30,198	70,0	45,0		Do.	Do.
	10	30,200	57,5	45,0		Calm	Clear and Dew.
	11	30,168	55,5	45,0		Do.	Do. and Do.
	Midnight	30,150	75,0	44,0		Do.	Do. Do.
A. M.	1	30,205	50,5	44,0		Do.	Clear.
	2	30,191	50,0	45,5		E. NE.	Do.
	3	30,170	75,0	46,5		Do.	Do.
	4	30,250	74,5	48,0		Do.	Mostly Cloudy, with Showers of Rain, and Thunder.
	5	30,300	74,0	49,0		Calm	Remarkable Haze.
	Mean	30,198	74,54	44,30			

TABLE I. continued.

DIARY FOR EVERY HOUR.

DECEMBER 1823.

Day of the Month.	Time.	Barometer.	Thermometer.	Hygrometer. Dry.	Hygrometer. Damp.	Winds.	Weather.
	h.	Inches.	°	°	°		
10th	6	30,110	71,0	46,0		NEy.	Clear.
10th A. M.	7	30,140	74,0	44,0		L. NEy.	Do.
	8	30,160	74,0	44,0		Calm.	Hazy.
	9	30,155	75,5	44,0		NEy.	Flying Clouds.
	10	30,098	80,0	45,0		Do.	Do.
	11	30,000	81,4	46,0		Vble. Sly.	Do.
	Noon	30,107	83,5	47,0		Do.	Clear.
P. M.	1	30,146	87,0	48,0		NE.	Flying Clouds.
	2	30,203	85,5	48,5		Do.	Do.
	3	30,189	83,0	49,5		Do.	Clear.
	4	30,149	81,5	49,8		Do.	Do.
	5	30,141	80,0	49,5		Do.	Very Clear.
	6	30,131	80,5	47,5		Do.	Flying Clouds.
	7	30,142	80,0	49,0		NEy.	Hazy.
	8	30,158	79,0	47,0		Do.	Do.
	9	30,167	78,0	47,5		Do.	Clear.
	10	30,209	75,5	46,0		Do.	Do.
	11	30,198	77,7	46,0		Do.	Very Clear.
	Midnight	30,198	76,5	45,0		Do.	Clear.
A. M.	1	30,193	76,0	45,7		Ll. NE.	Do.
	2	30,178	74,7	45,0		Calm.	Do.
	3	30,143	74,2	44,6		Do.	Do.
	4	30,142	73,5	44,5		Ll. NE.	Do.
	5	30,149	73,7	44,4		Do.	Do.
	Mean	30,159	79,34	46,56			

TABLE II.

Results of the Thermometer, Barometer and Hygrometer, as usually taken at the Observatory.

Day.	Time.	Barometer.	Thermometer.	Hygrometer.
January 1824.	H.	Inches.	°	°
19th	6 rise	30,109	60,2	55,9
	10 o'clock	30,148	78,0	57,0
	Noon	30,145	85,0	61,0
	2 o'clock	30,105	80,0	65,0
	6 set	30,100	70,2	68,0
	9 o'clock	30,123	75,0	59,0
	Mean	30,121	78,83	59,87
	Mean in 24 hours	30,123	75,71	59,81
	Difference	+ 0,002	— 3,09	— 0,06
	H.	Inches.	°	°
20th	6 rise	30,232	77,5	19,5
	10 o'clock	30,300	81,0	18,8
	Noon	30,275	82,4	18,5
	2 o'clock	30,275	83,0	19,0
	6 set	30,218	83,5	18,8
	9 o'clock	30,245	78,5	17,0
	Mean	30,252	80,45	18,38
	Mean in 24 h.	30,237	79,35	17,6
	Difference	— 0,016	— 1,10	— 0,05
	H.	Inches.	°	°
30th	6 rise	30,159	77,2	20,8
	10 o'clock	30,200	81,0	20,5
	Noon	30,200	84,0	20,5
	2 o'clock	30,150	85,4	21,0
	6 set	30,151	80,9	22,5
	9 o'clock	30,170	77,8	23,8
	Mean	30,172	80,70	21,38
	Mean in 24 h.	30,171	78,9	21,0
	Difference	+ ,002	— 1,85	+ 0,22

Corrections to be applied, according to the Signs, to the Mean Daily Heights of the Meteorological Diary kept at the times specified in this Table.

JANUARY.

	1st to 10th.	10th to 20th.	20th to 30th.
	Inches.	Inches.	Inches.
Barometer	0,0	—0,007	—0,007
Thermometer	— 2,51	— 2,70	1,08
Hygrometer	— 1,02	—0,21	—0,09

The Corrections for the Mean of the Monthly Heights in January, will be

	Inches.
Barometer	—0,003
Thermometer	—2,02
Hygrometer	—0,08

Height of the Thermometer, Barometer and Hygrometer, as usually taken at the Observatory, continued.

Day.	Time.	Barometer.	Thermometer.	Hygrometer.
February 1823.	m.	Inches.	°	°
10th	☉ rise	30,235	78,5	21,0
	10 o'clock	30,235	83,0	22,8
	Noon	30,238	85,4	24,0
	2 o'clock	30,243	84,0	21,5
	☉ set	30,195	81,0	23,2
	9 o'clock	30,250	78,8	23,8
	Mean	30,230	81,43	22,73
	Mean in 24 h.	30,212	79,48	21,05
	Difference	— 0,024	— 1,97	+ 0,97
	m.	Inches.	°	°
20th	☉ rise	30,200	79,2	22,0
	10 o'clock	30,249	83,0	21,4
	Noon	30,220	84,8	23,0
	2 o'clock	30,165	84,0	24,0
	☉ set	30,168	82,0	23,3
	9 o'clock	30,163	78,4	24,0
	Mean	30,193	80,9	23,3
	Mean in 24 h.	30,194	79,7	22,54
	Difference	+ 0,01	— 2,2	— 0,46
	m.	Inches.	°	°
28th	☉ rise	30,025	78,5	19,2
	10 o'clock	30,105	84,2	18,8
	Noon	30,100	86,0	18,0
	2 o'clock	30,068	86,0	19,2
	☉ set	30,063	83,8	19,0
	9 o'clock	30,100	81,0	18,5
	Mean	30,077	83,18	18,45
	Mean in 24 h.	30,076	81,88	18,27
	Difference	— 0,001	— 1,30	— 0,09

Corrections to be applied, according to the Signs, to the Mean Daily Heights of the Meteorological Diary kept at the times specified in this Table.

FEBRUARY.

	1st to 10th.	10th to 20th.	20th to 28th.
	Inches.	*Inches.*	*Inches.*
Barometer	— ,004	—0,000	+0,041
Thermometer	— 1,91	—2,08	—1,75
Hygrometer	+ 0,143	—0,003	—0,35

The Corrections for the Mean of the Monthly Heights in February, will be

	Inches.
Barometer	—0,001
Thermometer	—1,013
Hygrometer	—0,009

Height of the THERMOMETER, BAROMETER *and* HYGROMETER, *as usually taken at the* OBSERVATORY, *continued.*

Day.	Time.	Barometer.	Thermometer.	Hygrometer.
March 1813.	m.	Inches.	°	°
18th	3 rise	30,100	80,0	17,9
	10 o'clock	30,115	84,0	14,8
	Noon	30,130	87,0	16,4
	2 o'clock	30,068	81,8	16,2
	3 set	30,075	82,7	16,8
	6 o'clock	30,055	82,0	15,8
	Mean	30,076	82,52	16,16
	Mean in 24 h.	30,056	82,00	15,7
	Difference	— 0,020	— 1,25	— 0,46
	m.	Inches.	°	°
19th	3 rise	30,055	80,0	21,5
	10 o'clock	30,138	80,0	19,4
	Noon	30,130	86,2	22,0
	2 o'clock	30,000	86,8	22,4
	3 set	30,077	80,8	24,3
	6 o'clock	30,110	79,6	22,0
	Mean	30,079	82,52	21,19
	Mean in 24 h.	30,079	80,84	21,16
	Difference	— 0,000	— 2,08	— 0,03
	m.	Inches.	°	°
20th	3 rise	30,114	81,4	22,0
	10 o'clock	30,128	86,7	21,8
	Noon	30,143	89,2	23,0
	2 o'clock	30,128	89,0	23,0
	3 set	30,080	85,2	23,4
	6 o'clock	30,114	83,0	21,7
	Mean	30,119	85,88	22,16
	Mean in 24 h.	30,110	84,00	21,47
	Difference	— 0,009	— 1,58	— 1,01

Corrections to be applied, according to the Signs, to the Mean Daily Heights of the Meteorological Diary kept at the times specified in this Table.

MARCH.

	1st to 7th.	10th to 20th.	20th to 27th.
	Inches.	Inches.	Inches.
Barometer	— 0,010	— 0,029	— 0,030
	°	°	°
Thermometer	— 1,27	— 1,06	— 1,83
Hygrometer	— 0,35	— 0,28	— 0,57

The Corrections for the Mean of the Monthly Heights in March, will be

	Inches.
Barometer	— 0,013
	°
Thermometer	— 1,39
Hygrometer	— 0,37

Height of the Thermometer, Barometer and Hygrometer, as usually taken at the Observatory, continued.

Day.	Time.	Barometer.	Thermometer.	Hygrometer.
April 1823.	h.	Inches.	°	°
13th	☉ rise	30,000	83,5	20,5
	10 o'clock	30,002	88,2	20,5
	Noon	30,022	90,6	22,0
	2 o'clock	29,986	89,4	22,2
	☉ set	29,965	80,0	21,0
	9 o'clock	30,000	83,5	22,0
	Mean	30,000	86,27	21,62
	Mean in 24 h.	30,002	84,65	20,9
	Difference	− 0,002	− 1,60	− 1,12
	h.	Inches.	°	°
20th	☉ rise	29,974	83,5	16,8
	10 o'clock	30,008	89,2	25,5
	Noon	30,002	92,5	20,0
	2 o'clock	29,998	91,8	23,7
	☉ set	29,969	87,3	20,5
	9 o'clock	29,932	83,2	15,9
	Mean	29,962	88,5	21,58
	Mean in 24 h.	29,955	86,6	19,15
	Difference	− 0,007	− 1,90	− 2,43
	h.	Inches.	°	°
30th	☉ rise	29,930	83,5	21,0
	10 o'clock	29,964	89,0	21,5
	Noon	29,947	90,5	22,0
	2 o'clock	29,937	90,5	22,5
	☉ set	29,887	87,0	21,2
	9 o'clock	29,958	83,0	21,0
	Mean	29,930	87,6	21,8
	Mean in 24 h.	29,939	88,90	20,72
	Difference	− 0,009	− 1,40	− 0,83

Corrections to be applied, according to the Signs, to the Mean Daily Heights of the Meteorological Diary kept at the times specified in this Table.

APRIL.

	1st to 10th.	10th to 20th.	20th to 30th.
	Inches.	*Inches.*	*Inches.*
Barometer	− 0,003	−0,003	−0,007
Thermometer	− 1,61	−1,77	−1,63
Hygrometer	− 1,21	−1,92	−1,63

The Corrections for the Mean of the Monthly Heights in April, will be

	Inches.
Barometer	−0,009
Thermometer	−1,68
Hygrometer	−1,59

Height of the THERMOMETER, BAROMETER *and* HYGROMETER, *as usually taken at the* OBSERVATORY, *continued.*

Day.	Time.	Barometer.	Thermometer.	Hygrometer.
May 1823.	n.	Inches.	°	°
10th	☉ rise	29,938	86,0	21,0
	10 o'clock	29,930	91,2	28,5
	Noon	29,915	93,0	29,5
	2 o'clock	29,922	90,5	27,4
	☉ set	29,885	88,0	25,4
	9 o'clock	30,000	88,0	24,5
	Mean	29,937	89,45	26,05
	Mean in 24 h.	29,913	87,34	25,07
	Difference	— 0,004	— 1,91	— 0,98
	n.	Inches.	°	°
20th	☉ rise	29,955	85,0	22,0
	10 o'clock	30,004	91,5	23,4
	Noon	29,905	92,3	25,5
	2 o'clock	29,945	91,5	26,0
	☉ set	29,935	87,0	21,0
	9 o'clock	30,000	89,5	22,5
	Mean	29,972	88,8	23,9
	Mean in 24 h.	29,970	86,93	22,56
	Difference	— 0,002	— 1,87	— 1,34
	n.	Inches.	°	°
30th	☉ rise	29,972	83,0	24,0
	10 o'clock	30,004	92,0	28,0
	Noon	29,908	93,5	28,8
	2 o'clock	29,945	95,0	29,5
	☉ set	29,925	87,5	27,0
	9 o'clock	29,940	85,5	21,5
	Mean	29,964	89,10	27,13
	Mean in 24 h.	29,917	87,23	25,2
	Difference	— 0,002	— 1,87	— 1,93

Corrections to be applied, according to the Signs, to the Mean Daily Heights of the Meteorological Diary kept at the times specified in this Table.

MAY.

	1st to 10th.	10th to 20th.	20th to 30th.
	Inches.	*Inches.*	*Inches.*
Barometer	— 0,002	—0,003	—0,004
Thermometer	— 1,65	—1,89	—1,28
Hygrometer	— 0,005	—1,06	—1,53

The Corrections for the Mean of the Monthly Heights in May, will be

	Inches.
Barometer	—0,003
Thermometer	—1,80
Hygrometer	—1,16

Results of the THERMOMETER, BAROMETER and HYGROMETER, as usually taken at the OBSERVATORY, continued.

Day.	Time.	Barometer.	Thermometer.	Hygrometer.
June 1775.	H.	Inches.	°	°
10th	8 rise	29,903	85,5	33,0
	10 o'clock	29,918	92,2	36,0
	Noon	29,930	94,0	37,0
	4 o'clock	29,941	95,0	36,2
	8 set	29,925	91,4	34,5
	9 o'clock	29,928	89,8	34,8
	Mean	29,924	90,13	35,58
	Mean in 24 h.	29,953	90,47	35,34
	Difference	− 0,009	+ 0,08	− 0,24
	H.	Inches.	°	°
20th	8 rise	29,910	86,0	34,0
	10 o'clock	29,972	94,2	36,2
	Noon	29,960	96,0	37,0
	4 o'clock	29,995	94,0	36,5
	8 set	29,994	88,5	34,5
	9 o'clock	29,945	87,0	34,0
	Mean	29,934	90,59	34,55
	Mean in 24 h.	29,945	88,62	33,16
	Difference	+ 0,014	− 1,93	− 1,37
	H.	Inches.	°	°
30th	8 rise	29,904	84,5	32,0
	10 o'clock	29,909	87,0	33,8
	Noon	29,943	90,2	36,0
	4 o'clock	29,915	91,8	37,0
	8 set	29,875	91,7	38,5
	9 o'clock	29,910	86,5	33,0
	Mean	29,918	88,8	35,02
	Mean in 24 h.	29,940	87,60	34,7
	Difference	− 0,002	− 1,58	− 0,35

Corrections to be applied, according to the Signs, to the Mean Daily Heights of the Meteorological Diary kept in the Diner specified in this Table.

JUNE.

	1st to 10th.	10th to 20th.	20th to 30th.
	Inches.	*Inches.*	*Inches.*
Barometer	− 0,008	+ 0,001	+ 0,004
Thermometer	− 0,013	− 0,59	− 1,16
Hygrometer	− 1,08	− 0,93	− 0,84

The Corrections for the Mean of the Monthly Heights in June, will be

	Inches.
Barometer	− 0,001
Thermometer	− 0,87
Hygrometer	− 0,01

Height of the THERMOMETER, BAROMETER *and* HYGROMETER, *as usually taken at the* OBSERVATORY, *continued.*

Day.	Time.	Barometer.	Thermometer.	Hygrometer.
July 1817.	m.	Inches.	°	°
30th	☉ rise	29,837	84,0	43,0
	10 o'clock	29,935	87,5	44,0
	Noon	29,808	89,3	50,0
	2 o'clock	29,862	91,0	51,4
	☉ set	29,817	89,0	48,5
	9 o'clock	29,839	85,0	46,0
	Mean	29,863	87,33	47,13
	Mean in 24 h.	29,848	85,54	46,04
	Difference	— 0,012	— 0,99	— 0,21
	m.	Inches.	°	°
30th	☉ rise	29,887	87,5	32,5
	10 o'clock	29,932	91,0	42,5
	Noon	29,900	94,0	45,0
	2 o'clock	29,845	97,0	40,7
	☉ set	29,845	86,8	45,8
	9 o'clock	29,900	87,0	40,0
	Mean	29,885	92,2	42,38
	Mean in 24 h.	29,879	90,36	41,58
	Difference	— 0,006	— 2,83	— 1,00
	m.	Inches.	°	°
30th	☉ rise	29,865	83,0	38,0
	10 o'clock	29,860	86,2	40,0
	Noon	29,844	89,5	42,0
	2 o'clock	29,835	91,7	44,7
	☉ set	29,795	87,0	45,0
	9 o'clock	29,818	86,2	49,0
	Mean	29,829	87,27	43,78
	Mean in 24 h.	29,833	86,18	43,00
	Difference	+ ,004	— 1,09	— 0,78

Corrections to be applied, according to the Signs, to the Mean Daily Heights of the Meteorological Diary kept at the times specified in this Table.

JULY.

	1st to 10th.	10th to 20th.	20th to 30th.
	Inches.	Inches.	Inches.
Barometer	— 0,007	— 0,009	— 0,004
Thermometer	— 0,90	— 1,31	— 1,36
Hygrometer	— 0,96	— 0,005	— 0,89

The Corrections for the Mean of the Monthly Heights in July, will be

	Inches.
Barometer	— 0,004
Thermometer	— 1,35
Hygrometer	— 0,583

HEIGHT of the THERMOMETER, BAROMETER and HYGROMETER, as usually taken at the OBSERVATORY, continued.

Day.	Time.	Barometer.	Thermometer.	Hygrometer.
August 1823.	M.	Inches.	°	°
10th	9 rise	29,900	84,9	37,0
	10 o'clock	29,910	88,0	39,0
	Noon	29,930	91,2	40,0
	2 o'clock	29,885	93,0	41,0
	9 set	29,854	87,1	41,8
	9 o'clock	29,875	86,4	41,2
	Mean	29,899	88,33	39,91
	Mean in 24 h.	29,908	87,11	41,4
	Difference	+ 0,009	— 1,22	+ 1,45
	M.	Inches.	°	°
20th	9 rise	29,935	82,5	2,0
	10 o'clock	29,902	82,2	7,4
	Noon	29,908	92,4	10,2
	2 o'clock	29,872	92,0	8,0
	9 set	29,845	87,2	7,0
	9 o'clock	29,922	86,2	5,3
	Mean	29,907	88,33	6,65
	Mean in 24 h.	29,906	88,33	5,16
	Difference	— 0,001	— 1,08	— 1,39
	M.	Inches.	°	°
30th	9 rise	29,900	82,0	45,0
	10 o'clock	29,930	78,0	32,0
	Noon	29,908	77,8	30,0
	2 o'clock	29,925	79,0	27,5
	9 set	29,870	80,5	32,0
	9 o'clock	29,922	80,4	30,0
	Mean	29,921	79,6	32,88
	Mean in 24 h.	29,913	79,43	33,35
	Difference	— 0,008	— 2,17	+ ,47

Corrections to be applied, according to the Signs, to the Mean Daily Heights of the Meteorological Diary kept at the times specified in this Table.

AUGUST.

	1st to 10th.	10th to 20th.	20th to 30th.
	Inches.	*Inches.*	*Inches.*
Barometer	+ 0,000	+0,004	—0,004
Thermometer	— 1,15	—1,60	—1,07
Hygrometer	+ 0,33	+0,03	—0,83

The Corrections for the Mean of the Monthly Heights in August, will be

	Inches.
Barometer	+0,002
Thermometer	—1,27
Hygrometer	—0,033

Height of the THERMOMETER, BAROMETER *and* HYGROMETER, *as usually taken at the* OBSERVATORY, *continued.*

Day.	Time.	Barometer.	Thermometer.	Hygrometer.
September 1823.	n.	Inches.	°	°
15th	☉ rise	29,905	82,0	34,0
	10 o'clock	29,940	85,4	30,0
	Noon	29,925	88,0	38,0
	2 o'clock	29,930	80,0	40,0
	☉ set	29,870	85,6	38,8
	9 o'clock	29,938	84,8	39,8
	Mean	29,911	85,7	37,76
	Mean in 24 h.	29,915	84,21	36,89
	Difference	+ 0,004	— 1,45	— 0,87
	n.	Inches.	°	°
20th	☉ rise	29,928	87,8	28,0
	10 o'clock	29,900	87,2	29,0
	Noon	29,955	89,2	30,0
	2 o'clock	29,915	90,4	34,0
	☉ set	29,885	85,0	26,0
	9 o'clock	29,935	85,5	23,0
	Mean	29,937	86,5	27,93
	Mean in 24 h.	29,928	84,61	29,16
	Difference	+ 0,001	— 1,89	— 1,71
	n.	Inches.	°	°
30th	☉ rise	30,000	84,0	35,0
	10 o'clock	30,025	86,0	37,5
	Noon	30,028	92,5	40,5
	2 o'clock	29,945	92,7	45,2
	☉ set	29,923	85,6	35,0
	9 o'clock	29,978	85,8	36,0
	Mean	29,983	88,87	37,87
	Mean in 24 h.	29,982	85,65	37,94
	Difference	— 0,001	— 2,02	— 0,86

Corrections to be applied, according to the Signs, to the Mean Daily Heights of the Meteorological Diary kept at the times specified in this Table.

SEPTEMBER.

	1st to 10th.	10th to 20th.	20th to 30th.
	Inches.	*Inches.*	*Inches.*
Barometer	— ,002	+0,000	—0,000
Thermometer	— ,82	—1,67	—2,25
Hygrometer	— 0,20	—1,32	—1,31

The Corrections for the Mean of the Monthly Heights in September, will be

	Inches.
Barometer	—0,007
Thermometer	—1,18
Hygrometer	—0,94

Height of the THERMOMETER, BAROMETER *and* HYGROMETER, *as usually taken at the* OBSERVATORY, *continued.*

Day.	Time.	Barometer.	Thermometer.	Hygrometer.
October 1873.	H.	Inches.	°	°
19th	9 rise	30,015	84,4	35,0
	10 o'clock	30,030	80,0	36,0
	Noon	30,015	92,2	39,0
	2 o'clock	29,965	84,8	37,0
	3 set	29,945	85,7	34,0
	9 o'clock	30,018	85,4	32,0
	Mean	29,990	86,25	35,5
	Mean in 24 h.	29,996	85,96	34,31
	Difference	— 0,002	— 2,29	— 1,19
	H.	Inches.	°	°
20th	9 rise	30,038	79,0	33,8
	10 o'clock	30,100	89,3	37,0
	Noon	30,098	92,0	36,0
	2 o'clock	30,057	90,8	36,8
	3 set	30,025	86,5	34,5
	9 o'clock	30,099	84,2	34,0
	Mean	30,054	86,96	35,30
	Mean in 24 h.	30,076	84,74	33,84
	Difference	+ 0,022	— 2,22	— 1,34
	H.	Inches.	°	°
21st	9 rise	29,955	80,0	37,0
	10 o'clock	30,018	79,2	7,0
	Noon	30,018	80,0	Dam. 2,5
	2 o'clock	29,977	78,8	2,5
	3 set	29,982	78,0	2,4
	9 o'clock	30,039	77,6	Dry. 0,5
	Mean	29,997	78,93	2,85
	Mean in 24 h.	29,997	78,09	2,25
	Difference	— 0,009	— 0,84	— 0,60

Corrections to be applied, according to the Signs, to the Mean Daily Heights of the Meteorological Diary kept at the times specified in this Table.

OCTOBER.

	1st to 10th.	10th to 20th.	20th to 30th.
	Inches.	Inches.	Inches.
Barometer	— 0,002	+0,009	+0,009
Thermometer	— 2,85	—2,25	—1,53
Hygrometer	— 1,02	—1,33	—1,05

The Corrections for the Mean of the Monthly Heights in October, will be

	Inches.
Barometer	+0,005
Thermometer	—2,08
Hygrometer	—1,14

Height of the THERMOMETER, BAROMETER *and* HYGROMETER, *as usually taken at the* OBSERVATORY *continued.*

Day.	Time.	Barometer.	Thermometer.	Hygrometer.
November 1813.	H.	Inches.	°	°
10th	☉ rise	30,055	78,9	25,5
	10 o'clock	30,110	83,0	26,6
	Noon	30,100	84,0	28,5
	2 o'clock	30,108	86,0	33,0
	☉ set	30,027	84,0	31,5
	9 o'clock	30,030	78,8	29,0
	Mean	30,058	81,48	29,02
	Mean in 24 h.	30,043	79,65	28,54
	Difference	− 0,015	− 2,85	− 0,38
	H.	Inches.	°	°
20th	☉ rise	30,150	78,8	20,5
	10 o'clock	30,200	86,2	20,3
	Noon	30,200	81,0	22,0
	2 o'clock	30,182	85,7	22,0
	☉ set	30,174	82,5	23,0
	9 o'clock	30,205	82,0	23,0
	Mean	30,188	82,37	21,83
	Mean in 24 h.	30,200	82,75	21,84
	Difference	+ 0,012	+ 0,18	+ 0,21
	H.	Inches.	°	°
30th	☉ rise	30,250	73,0	33,4
	10 o'clock	30,150	82,4	35,6
	Noon	30,243	85,8	37,7
	2 o'clock	30,172	84,5	30,0
	☉ set	30,190	75,5	37,7
	9 o'clock	30,230	77,8	37,8
	Mean	30,221	80,5	36,80
	Mean in 24 h.	30,223	78,77	36,21
	Difference	+ 0,002	− 1,73	− 0,45

Corrections to be applied, according to the Signs, to the Mean Daily Heights of the Meteorological Diary kept at the times specified in this Table.

NOVEMBER.

	1st to 10th.	10th to 20th.	20th to 30th.
	Inches.	Inches.	Inches.
Barometer	− 0,007	− 0,008	+ 0,008
Thermometer	− 1,49	− 0,08	− 0,77
Hygrometer	− 0,49	− 0,085	− 0,12

The Corrections for the Mean of the Monthly Heights in November, will be

	Inches.
Barometer	− 0,002
Thermometer	− 1,08
Hygrometer	− 0,23

Height of the Thermometer, Barometer and Hygrometer, as usually taken at the Observatory, continued.

Day.	Time.	Barometer.	Thermometer.	Hygrometer.
December 1823.	h.	Inches.	°	°
10th	☉ rise	30,200	74,2	31,0
	10 o'clock	30,205	80,0	32,8
	Noon	30,214	85,3	34,8
	2 o'clock	30,208	81,0	35,2
	☉ set	30,190	79,5	36,2
	9 o'clock	30,230	77,7	38,5
	Mean	30,224	80,15	34,03
	Mean in 24 h.	30,222	78,2	33,54
	Difference	— 0,002	— 1,95	— 0,09
	h.	Inches.	°	°
20th	☉ rise	30,178	70,0	45,0
	10 o'clock	30,200	83,2	45,0
	Noon	30,170	85,0	47,0
	2 o'clock	30,148	83,8	47,0
	☉ set	30,147	80,0	46,0
	9 o'clock	30,188	79,0	45,0
	Mean	30,172	81,10	45,83
	Mean in 24 h.	30,169	78,24	44,36
	Difference	— 0,003	— 2,92	— 1,47
	h.	Inches.	°	°
30th	☉ rise	30,148	76,2	46,8
	10 o'clock	30,188	80,3	45,0
	Noon	30,187	85,8	47,0
	2 o'clock	30,153	85,5	49,3
	☉ set	30,125	80,5	47,7
	9 o'clock	30,192	79,4	47,0
	Mean	30,168	81,28	47,03
	Mean in 24 h.	30,166	78,24	45,56
	Difference	— 0,002	— 1,94	— 1,47

Corrections to be applied, according to the Signs, to the Mean Daily Heights of the Meteorological Diary kept at the times specified in this Table.

DECEMBER.

	1st to 10th.	10th to 20th.	20th to 30th.
	Inches.	*Inches.*	*Inches.*
Barometer	— 0,000	—0,003	—0,002
Thermometer	— 1,84	—2,08	—2,08
Hygrometer	— 0,57	—0,78	—1,27

The Corrections for the Mean of the Monthly Heights in December, will be

	Inches.
Barometer	—0,002
Thermometer	—2,03
Hygrometer	—0,77

FIRST SUPPLEMENTARY TABLE.

Corrections from the foregoing TABLE (II) to be applied to the Mean Daily Heights of the Barometer, Thermometer and Hygrometer.

Months.	Barometer.			Thermometer.			Hygrometer.		
	1st to 10th.	10th to 20th.	20th to 30th.	1st to 10th.	10th to 20th.	20th to 30th.	1st to 10th.	10th to 20th.	20th to 30th.
	Inches.	Inches.	Inches.	°	°	°	°	°	°
1816 January ...	0,0	−0,007	−0,007	−2,51	−2,09	−1,68	−1,02	−0,81	−0,22
1817 February ...	−0,001	0,000	+0,001	−1,92	−2,08	−1,79	+0,985	−0,005	−0,35
March	−0,010	−0,000	−0,000	−1,37	−1,06	−1,83	−0,35	−0,94	−0,12
April ...	−0,005	−0,000	−0,000	−1,61	−1,77	−1,63	−1,21	−1,92	−1,63
May ...	−0,002	−0,002	−0,004	−1,63	−1,89	−1,29	−0,305	−1,06	−1,53
June ...	−0,008	+0,001	+0,001	−0,015	−0,59	−1,10	−1,05	−0,80	−0,84
July ...	−0,007	−0,000	−0,001	−0,99	−1,51	−1,30	−0,96	−0,000	−0,80
August ...	+0,006	+0,001	−0,004	−1,13	−1,00	−1,07	+0,32	+0,03	−0,05
September ...	−0,002	+0,002	0,000	−0,88	−1,07	−2,95	−0,99	−1,29	−1,31
October ...	−0,002	+0,000	+0,000	−2,45	−2,75	−1,83	−1,02	−1,38	−1,03
November ...	−0,007	−0,002	+0,006	−1,69	−0,98	−0,77	−0,49	−0,985	−0,12
December ...	−0,000	−0,003	−0,002	−1,84	−2,08	−2,08	−0,37	−0,78	−1,37

SECOND SUPPLEMENTARY TABLE.

Corrections from TABLE II *to be applied to the Mean Monthly Heights of the Barometer, Thermometer and Hygrometer.*

Months.			Barometer.	Thermometer.	Hygrometer.
			Inches	°	°
January	...	1816 ... 1803	— 0,003	— 0,69	— 0,68
February	...	...	— 0,001	— 1,015	— 0,660
March	...	...	— 0,013	— 1,39	— 0,37
April	...	...	— 0,006	— 1,68	— 1,39
May	...	...	— 0,003	— 1,30	— 1,36
June	...	...	— 0,001	— 0,87	— 0,81
July	...	...	— 0,000	— 1,35	— 0,985
August	...	...	+ 0,004	— 1,07	— 0,652
September	...	...	— 0,000	— 1,58	— 0,54
October	...	...	+ 0,005	— 0,98	— 1,14
November	...	...	— 0,000	— 1,08	— 0,83
December	...	...	— 0,004	— 0,09	— 0,27

TABLE III.

Daily Mean Heights of the Thermometer and Barometer for the Year 1796.

Day.	February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.	
	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.
	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.
1	39,1	29,123	39,8	30,079	51,5	30,011	60,2	29,950	62,4	29,982	66,8	29,982	61,8	29,931	62,3	29,910	54,5	29,954	54,6	29,993	38,0	30,010
2	39,1	30,139	39,8	30,150	52,0	30,011	59,0	29,956	62,4	29,968	65,0	29,992	64,1	29,926	62,4	29,954	52,5	29,926	53,7	29,992	39,5	30,043
3	39,2	30,147	39,7	30,146	54,8	30,139	60,4	29,937	62,4	29,980	66,2	29,987	63,6	29,894	62,2	29,886	52,5	29,860	53,4	29,980	39,5	29,945
4	37,8	30,076	39,1	30,092	52,1	30,030	60,3	29,954	59,9	29,780	66,2	29,832	62,1	29,865	61,9	29,872	54,1	29,894	50,3	29,896	40,8	29,913
5	38,8	30,009	39,1	30,102	54,3	30,041	62,2	29,990	59,4	29,652	66,4	29,852	62,2	29,826	60,8	29,874	54,1	29,938	49,2	29,894	39,2	29,995
6	38,1	30,044	40,1	30,225	54,0	30,040	60,0	29,954	59,1	29,648	66,2	29,884	63,7	29,903	61,0	29,893	54,2	29,977	49,2	30,011	39,3	29,998
7	39,2	30,064	40,3	30,307	52,5	30,000	61,5	29,883	59,1	29,661	67,2	29,859	63,3	29,901	60,8	29,872	54,1	29,967	50,5	29,913	41,4	29,956
8	39,0	30,091	41,0	30,289	52,5	29,995	61,2	29,895	59,2	29,691	65,1	29,841	61,3	29,869	61,2	29,888	54,1	29,888	50,6	29,899	42,0	29,984
9	40,0	30,119	41,5	30,147	54,2	29,999	62,3	29,903	61,1	29,705	64,7	29,841	60,7	29,905	60,2	29,905	53,6	29,905	50,4	29,905	43,5	29,951
10	40,0	30,140	41,0	30,124	54,4	30,020	60,5	29,904	62,5	29,838	62,5	29,840	60,3	29,909	61,4	29,947	50,1	29,887	47,8	29,958	50,0	29,960
11	40,0	30,167	41,4	30,110	54,0	30,065	59,5	29,948	61,0	29,918	63,1	29,855	60,2	29,868	60,0	29,900	48,6	29,894	48,0	29,919	50,0	29,955
12	39,0	30,169	41,0	30,105	52,0	30,085	57,0	29,919	61,0	29,908	60,1	29,859	64,3	29,866	60,5	29,901	48,0	29,918	47,2	29,960	50,0	29,948
13	39,0	30,167	41,0	30,116	52,0	30,078	58,7	29,929	60,5	29,903	60,1	29,896	60,5	29,903	60,0	29,934	48,0	29,949	47,0	29,947	47,3	30,000
14	39,1	30,134	40,5	30,095	52,4	30,038	59,4	29,917	61,2	29,936	64,3	29,902	64,0	29,903	60,0	29,953	47,1	29,962	47,1	29,981	47,3	30,016
15	39,1	30,116	39,0	30,046	53,0	29,984	60,0	29,910	60,0	29,893	63,3	29,872	65,5	29,847	60,0	29,916	48,5	29,909	47,0	29,967	47,3	30,129
16	39,4	30,139	41,3	30,071	54,3	29,909	59,2	29,840	61,1	29,904	63,3	29,877	65,0	29,891	59,2	29,856	48,2	29,909	47,1	29,899	47,2	30,095
17	39,1	30,133	40,3	30,004	54,3	29,902	58,3	29,847	61,0	29,904	63,0	29,915	64,1	29,896	59,4	29,903	48,1	29,903	47,2	29,953	47,2	30,076
18	39,1	30,126	41,3	30,000	52,0	29,909	57,0	29,867	61,0	29,898	63,0	29,922	64,0	29,873	59,0	29,909	48,2	29,907	47,1	30,046	47,0	30,079
19	39,0	30,134	41,0	30,013	54,0	29,934	58,0	29,911	61,0	29,901	63,0	29,897	63,7	29,843	59,0	29,944	48,0	29,960	47,0	30,048	47,0	30,139
20	39,0	30,128	39,0	30,022	54,0	29,966	57,3	29,895	60,3	29,908	64,1	29,953	63,4	29,882	59,7	29,930	48,0	29,930	47,0	29,991	47,3	30,103
21	39,0	30,105	41,3	30,086	54,0	29,993	58,0	29,900	60,3	29,900	64,0	29,891	63,7	29,913	60,3	29,900	48,0	29,871	49,0	30,012	47,0	30,074
22	39,1	30,131	41,1	30,049	53,0	30,002	60,1	29,930	60,5	29,939	64,0	29,905	61,4	29,847	60,3	29,934	48,3	29,934	49,1	30,054	46,0	30,121
23	39,2	30,102	41,1	30,049	53,0	29,962	57,3	29,900	60,5	29,900	63,0	29,906	61,0	29,905	61,1	29,936	47,3	29,924	48,3	30,022	46,1	30,099
24	39,3	30,132	39,3	30,001	50,3	29,934	56,0	29,901	59,0	29,900	63,0	29,908	61,0	29,928	61,3	29,936	47,3	29,908	48,3	30,037	46,0	30,077
25	39,1	30,128	40,1	30,000	50,3	29,934	56,0	29,900	59,1	29,904	62,0	29,873	60,3	29,903	60,1	29,913	47,3	29,897	47,3	29,987	47,0	30,077
26	37,2	30,100	41,0	30,022	50,0	29,972	56,1	29,949	59,2	29,907	62,0	29,920	60,2	29,902	60,1	29,913	47,3	29,900	47,0	29,980	47,0	30,080
27	37,3	30,094	40,0	30,030	50,3	29,974	55,3	29,953	59,1	29,908	62,0	29,905	60,2	29,879	59,0	29,894	48,0	29,869	47,3	29,962	47,0	30,052
28	37,3	30,143	40,3	30,000	50,3	29,973	55,3	29,941	59,0	29,911	62,0	29,915	59,2	29,890	59,2	29,911	48,3	29,911	47,3	29,936	47,0	30,054
29	37,3	30,097	41,3	30,054	50,3	29,959	55,3	29,933	59,1	29,911	62,0	29,907	59,2	29,878	59,2	29,911	47,3	29,914	47,3	29,974	46,0	30,038
30			40,0	30,075	50,3	29,959	55,3	29,943	59,2	29,914	62,0	29,918	59,2	29,878	59,2	29,899	48,3	29,903	47,3	29,986	47,3	30,033
31			39,1	30,050			55,3	29,928			61,1	29,909	58,3	29,893			48,1	30,000			46,0	30,097

Daily Mean Heights of the Thermometer and Barometer for the Year 1797.

Day.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.	
	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.
	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.
1	37,8	30,004	39,8	30,300	39,4	30,209	46,5	30,271	49,4	30,063	59,1	29,950	62,8	29,980	64,2	29,777	57,5	29,958			50,3	29,948	37,8	30,026
2	37,2	30,061	34,8	30,110	41,3	30,314	44,3	30,059	49,8	30,048	57,1	29,988	60,1	30,007	63,6	29,774	54,3	29,855	44,3	30,084	39,5	30,048		30,038
3	39,6	30,074	37,6	30,108	42,3	30,301	50,1	30,074	50,4	29,973	59,3	29,998	63,8	29,979	63,4	29,749	56,1	29,941	46,8	29,917	37,3	29,998		30,064
4	43,7	30,146	39,3	30,093	42,4	30,107	50,6	29,954	47,6	29,954		29,955	63,2	29,885	63,6	29,893	54,6	29,892	48,4	29,951	41,7	29,961	39,8	30,032
5	41,4	30,092	39,8	30,099	42,6	30,202	51,1	29,979	47,7	29,997	59,5	29,984	63,8	29,867	63,1	29,942	57,3	29,962	48,4	29,947	41,4	30,047	37,1	30,062
6	37,4	30,134	39,8	30,080	43,3	30,177	50,1	29,951	47,3	29,942	59,8	29,982	63,8	29,788	63,1	29,970	57,1	29,926	48,4	29,899	41,2	30,008	39,7	30,004
7	39,6	30,186	39,8	30,051	41,7	30,001	52,8	30,008	48,3	29,956	59,1	29,908	64,8	29,788	64,4	29,849	57,1	29,948	48,4	29,883	41,7	29,934	39,8	29,994
8			37,8	30,099	41,1	30,022	54,8	29,974	50,6	29,952	59,2	29,796	63,8	29,788	63,1	29,849	57,3	29,894	48,8	29,912	41,7	29,951	37,4	29,998
9	39,6	30,097	39,8	30,094	41,1	30,099	49,3	29,994	50,1	29,956	59,4	29,802	63,8	29,802	63,7	29,900	54,3	29,903	48,3	29,903	41,7	30,049	39,4	30,005
10	37,8	30,118	37,8	30,111	39,6	30,020	49,6	29,960	52,4	29,926	59,8	29,802	63,8	29,802	63,4	29,795	53,3	29,963	48,3	29,963	39,3	29,971	37,6	29,955
11	39,4	30,096	34,7	30,089	41,6	30,005	50,7	29,968	50,3	29,962	59,3	29,881	63,6	29,901	63,4	29,739	54,8	29,934	48,7	29,919	40,7	29,972	39,6	30,007
12	39,4	30,094	39,8	30,104	40,1	30,091	50,4	29,939	49,3	29,974	59,3	29,979	63,3	29,976	63,4	29,849	55,3	29,886	48,7	29,962	41,4	29,993	39,3	30,161
13	39,3	30,180	39,8	30,124	40,3	30,054	49,3	29,954	49,3	29,956	59,3	29,906	63,8	29,898	63,3	29,929	54,3	29,937	47,3	30,004	39,3	30,004	39,6	30,192
14	39,8	30,209	39,8	30,117	40,3	30,041	49,4	29,952	49,6	29,956	59,3	29,881	63,8	29,923	63,3	29,893	53,3	29,893	47,3	29,946	39,4	30,133	39,1	30,114
15	39,8	30,206	39,8	30,046	41,3	30,041	49,3	29,938	49,8	29,782	59,3	29,908	63,8	29,893	63,8	29,944	53,4	29,899	47,3	29,899	39,3	30,102	39,1	30,107
16	37,8	30,094	37,8	30,048	40,1	30,007	49,3	29,902	49,8	29,782	59,4	29,873	63,3	29,898	63,1	29,893	54,1	29,897	47,3	29,897	39,3	30,075	39,3	30,142
17	37,1	30,095	37,8	30,078	40,1	30,091	49,4	30,006	50,1	29,926	59,3	29,923	63,7	29,845	63,4	29,850	54,3	29,923	47,3	29,956	39,7	30,054	39,1	30,143
18	39,7	29,997	39,8	30,050	40,8	30,004	49,3	30,003	50,1	29,989	59,3	29,898	63,8	29,891	63,8	29,914	54,1	29,923	47,3	29,946	39,1	30,007	39,3	30,107
19	39,8	29,981	41,1	30,080	40,4	30,011	49,3	29,995	50,1	29,989	59,3	29,906	63,8	29,906	63,8	29,957	53,3	29,950	46,3	29,992	39,3	30,101	37,6	30,096
20	39,8	30,001	39,8	30,131	40,1	30,070	49,8	29,995	49,1	29,946	57,1	29,923	63,8	29,883	63,8	29,897	53,3	29,903	45,8	29,966	40,8	30,079	39,3	30,059
21	39,4	30,011	39,8	30,078	40,3	30,075	49,7	29,954	48,6	29,862	56,8	29,777	64,1	29,918	63,8	29,979	53,4	30,018	46,8	30,009	40,7	30,111	37,1	30,063
22	39,8	30,088	39,8	30,081	40,3	30,075	49,8	29,970	48,8	29,908	56,8	29,748	64,8	29,927	63,8	29,884	53,8	30,004	46,3	30,040	40,7	30,121	37,8	30,092
23	39,8	30,107	40,1	30,097	40,3	30,077	49,8	29,978	49,8	29,931	56,7	29,800	64,8	29,760	63,1	29,979	53,8	30,002	46,8	30,019	40,8	30,102	37,8	30,073
24	39,8	30,114	40,1	30,114	40,8	30,089	49,1	29,978	49,8	29,954	56,8	29,800	64,8	29,731	63,1	29,963	53,8	29,986	46,1	30,017	39,8	30,094	38,3	30,106
25	39,8	30,108	39,8	30,103	40,8	30,093	49,3	29,997	47,3	29,965	56,8	29,811	64,8	29,772	63,3	29,978	53,3	29,993	46,3	29,993	39,8	30,054		
26	39,4	30,070	39,8	30,122	40,3	29,984	49,7	29,969	49,8	29,942	56,1	29,865	64,8	29,719	63,8	29,948	54,8	30,000	46,3	30,038	39,8	30,093	37,3	30,102
27	39,4	30,083	39,8	30,119	40,3	29,988	49,8	29,993	49,8	29,969	56,8	29,832	64,8	29,749	63,8	29,969	54,3	29,992	46,4	30,030	39,8	30,093	37,3	30,142
28	37,8	30,107	39,8	30,093	40,8	29,984	49,4	29,959	49,8	29,948	56,8	29,800	64,8	29,749	63,1	29,911	54,8	29,988	46,3	30,030	39,4	30,071	37,3	30,141
29	38,3	30,140			40,8	30,026	49,3	29,959	49,8	29,948	56,8	29,800	64,8	29,749	63,8	29,919	54,8	29,973	46,3	29,978	39,4	30,093	39,3	30,102
30	38,6	30,086			41,1	29,977	49,4	29,940	49,3	29,948	56,8	29,800	64,8	29,741	63,8	29,957	54,3	29,953	46,3	29,932	39,3	30,093	39,3	30,112
31	39,2	30,088			41,8	29,988			49,3	29,948			64,8	29,709	63,8	29,924			46,3	29,889			39,3	30,109

Daily Mean Height of the Thermometer and Barometer for the Year 1798.

Day.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.	
	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.
	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.
1	39,1	30,101	39,8	30,136		30,160	44,2	29,999	59,6	29,972	60,2	29,737		29,864	66,4	29,944	66,0	29,909	54,2	29,914	44,6	30,042	40,1	30,118
2	39,8	30,095	37,4	30,072		30,139	44,3	29,997	54,5	29,993	53,6	29,795	66,6	29,910	64,6	30,003			50,6	29,997	39,7	30,053	42,6	30,159
3	39,6	30,056	39,4	30,054		30,130	44,3	29,908	57,3	29,989	59,2	29,704	66,8	29,891	64,6	29,999	66,4	29,957	54,2	29,968	39,6	29,999	39,6	30,139
4	39,2	30,090	41,3	30,014		30,107	45,6	29,893	57,4	29,992	59,2	29,777	66,2	29,917	64,1	29,964	66,1	29,992	54,6	30,022	39,7	30,018	39,1	30,092
5	39,2	30,092	39,7	30,061		30,133	46,2	29,914	54,3	29,975	59,3	29,774	66,2	29,909	67,4	29,972	66,7	29,961	54,8	29,983	39,3	29,913	39,6	
6	37,4		39,8	30,077	46,0	30,117	46,2	29,974	56,2	29,959	59,2	29,783	66,7	29,891	64,2	29,978	66,4	29,972	54,4	29,955	39,2	29,965	37,3	30,092
7	37,6		39,8	30,057	45,7	30,097	46,3	29,943	54,3	29,943	54,2	29,773	66,4	29,891	64,3	29,978	66,7	29,933	54,7	29,928		29,991	38,7	30,058
8	39,3		39,3	30,091	41,2	30,099	46,3	29,925	54,3	29,905	54,1	29,770	66,2	29,898	64,2	29,981	66,6	29,950	54,2	29,966	37,5	30,004	37,3	30,087
9	39,6		41,0	30,051	46,0	30,091	46,4	29,918	56,6	29,905	56,2	29,769	67,0	29,898	64,1	29,971	66,6	29,963	54,2	29,954	38,7	29,990	38,7	30,064
10	39,5		39,7	30,041	41,2	30,086	46,6	29,921	54,2	29,990	54,6	29,809	66,6	29,903	64,3	29,979	66,6	29,944	54,2	29,989	40,2	30,005	39,6	30,102
11	39,4	30,101	39,6	30,050	41,2	30,095	46,3	29,951	54,3	29,997	54,1	29,909	66,2	29,874	64,6	29,964	66,6	29,910	54,2	29,964	37,3	30,041	39,4	30,121
12	39,6	30,100	39,6	30,062	46,2	30,088	46,2	29,958	56,2	29,954	57,2	29,905	66,6	29,901	64,7	29,989	66,6	29,930	54,6	29,954	37,6	30,008	37,2	30,103
13	39,6	30,124	39,1	30,071	41,2	30,078	46,1	29,962			54,6	29,911	66,6	29,917	64,6	29,941	67,3	29,991	54,7	29,963	40,2	30,058	39,2	30,111
14	39,6	30,103	39,7	30,068	41,2	30,089	46,6	29,994	57,0	29,957	56,6	29,916	66,4	29,898	64,6	29,969	67,3	29,991	54,7	29,995	39,7	30,065	37,0	30,104
15	39,6	30,103	39,0	30,052	46,2	30,093	46,6	29,989	56,2	29,929	56,2	29,932	66,4	29,893	64,3	29,963	67,3	29,991	54,4	30,014	39,6	30,093		30,129
16	39,6	30,145	39,6	30,067	46,4	30,096	46,2	29,984	56,2	29,984	56,2	29,909	66,2	29,909	64,2	29,957	68,1	29,989	54,2	29,963	39,7	30,090		
17	39,6	30,089	37,6	30,081	45,8	30,078	46,2	29,979	56,2	29,979	56,2	29,909	66,4	29,903	64,7	29,963	68,1	29,969	54,2	30,007	37,1	30,077	38,8	30,139
18	39,6	30,092	39,6	30,081	46,2	30,053	46,6	29,954	57,6	29,958	56,2	29,951	67,4	29,899	64,7	29,962	68,1	29,977	54,4	29,992			37,6	30,122
19	39,6	30,102	39,6	30,078	46,6	30,058	46,6	29,965	56,1	29,979	56,6	29,930	66,4	29,927	64,6	29,991	68,1	29,969	54,6	29,993	39,3	30,139	37,6	30,095
20	39,6	30,112	39,6	30,099	46,6	30,084	46,2	29,986			56,6	29,999	67,4	29,903	64,6	29,999	68,1	29,969	54,6	29,993	39,2	30,143	38,6	30,177
21	39,6	30,134	39,6	30,091	46,6	30,054	46,2	29,957			56,6	29,993	66,2	29,911	64,6	29,994	67,2	29,959			39,2	30,148	38,7	30,151
22	39,6	30,110	38,7	30,091	45,7	30,047	46,6	29,993	57,2	29,980	56,6	29,993	66,2	29,909	64,6	29,979	67,4	29,979	54,6	29,959	38,6	30,145	37,6	30,131
23	39,6	30,102	39,6	30,091	45,6	30,044	46,6	29,999	56,6	29,994	56,6	29,993	66,6	29,891	64,6	29,947	67,6	29,993	54,6	29,948	37,6	30,139		30,099
24	39,6	30,101	39,6	30,101	45,8	30,074	46,6	29,993	57,2	29,982	56,6	29,991	66,6	29,878	64,7	29,918	67,6	29,984	54,6	29,915	38,7	30,139	38,6	30,109
25	39,6	30,101	39,6	30,101	45,6	30,092	46,6	29,999	54,2	29,987	56,6	29,976	66,6	29,872	64,6	29,988	68,1	29,992	54,6	29,964	40,6	30,148		30,140
26	39,6	30,107	37,6	30,107	46,6	30,034	46,6	29,911	57,2	29,998	56,6	29,998	66,6	29,902	64,6	29,999	68,6	29,959	54,6	29,954	39,6	30,143	37,6	30,173
27	39,6	30,216	37,3	30,101	45,6	30,118	46,6	29,949	54,2	29,942	57,2	29,929	66,6	29,903	64,6	29,959	68,6	29,959	54,6	29,958	39,6	30,143	37,6	30,199
28	39,6	30,170		30,092	45,6	30,089	46,6	29,959	54,2	29,954	56,7	29,972	66,6	29,868	64,7	29,999	68,6	29,910		30,072	40,6	30,146	37,3	30,147
29	39,6	30,152			46,6	30,055	46,6	29,969	54,2	29,948	56,6	29,929	66,7	29,854	64,6	29,994	68,6	29,963	54,6	30,043	41,2	30,163	37,6	30,159
30	39,6	30,177			46,6	30,078	46,6	29,978	54,2	29,957	56,6	29,947	66,6	29,928	64,6	29,992	68,6	29,951	54,6	30,078	39,2	30,134	37,6	30,171
31	39,6	30,165			46,6	30,094			54,2	29,959			66,6	29,959	64,6	29,957			54,2	30,080			38,2	30,143

Daily Mean Height of the Thermometer and Barometer for the Year 1799.

Day.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.	
	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.
	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.
1	38,7	30,130	39,8	30,102	46,0	30,062	51,0	30,054	55,0	30,054	61,0	29,745	69,0	29,734	69,1	29,614		29,603	49,0	29,928	39,1	30,309	36,0	30,132
2	39,0	30,103	34,0	30,085	40,7	30,110	51,1	30,054	60,4	29,969		29,678	61,2	29,760	67,6	29,614	64,0	29,642	50,0	30,000	39,0	30,307	29,0	30,180
3	37,0	30,147		30,030		30,032	54,0	30,049	58,2	30,004	61,0	29,900	69,0	29,862	69,3	29,649	64,0	29,654	52,0	29,988	39,0	30,291	29,0	30,138
4	37,0	30,155	37,0	30,052	38,0	30,141	54,0	30,038	62,0	29,960	59,0	29,998	69,0	29,860	69,0	29,655	62,0	29,695	47,0	29,972	40,0	29,907	29,0	30,132
5	37,0	30,146	29,0	30,061	38,0	30,017	54,0	30,007			59,0	29,915	69,0	29,900	69,0	29,655	63,0	29,697	46,7	29,967	40,0	29,911	29,0	30,100
6	39,0	30,150	37,0	30,030	40,0	30,021	50,0	30,000	60,7	29,900	60,0	29,907	69,0	29,900	69,0	29,652	61,0	29,648	46,0	29,980			29,0	30,004
7	37,0	30,137	39,0	30,130	42,0	30,074			60,0	29,804	60,7	29,910	69,0	29,897	68,0	29,647	60,0	29,668	46,0	29,957	40,0	29,893	27,0	30,186
8	37,0	30,115	37,0	30,151	40,0	30,000	54,0	29,883	60,7	29,860	60,0	29,909	69,0	29,902	69,1	29,703	60,7	29,629	44,0	29,947	39,0	29,890	30,0	30,192
9	37,0	30,101	39,0	30,139	42,0	30,044	53,0	29,918	60,1	29,940	59,0	29,924	67,0	29,898	69,1	29,710	61,0	29,688	44,0	29,942	39,0	29,898	27,0	30,059
10	37,0	30,149			42,0	30,018	52,0	29,949	60,1	29,949	59,0	29,888	69,0	29,888	69,1	29,717	59,0	29,688	45,0	29,963	39,0	29,895	28,0	30,059
11	39,0	30,166	39,0	30,200	43,0	30,002	52,0	29,988	60,7	29,957	57,1	29,934	67,0	29,898	69,0	29,647			46,7	29,971	39,0	29,897	29,0	30,171
12	39,0	30,099	39,0	30,196	44,0	30,018	56,0	29,988			60,0	29,934	69,0	29,888	69,0	29,647	57,0	29,696	46,0	29,956	39,0	29,894	29,0	29,974
13			37,0	30,204	44,0	30,059	58,0	29,995	62,0	29,904	59,0	29,904	69,0	29,904	69,0	29,678	57,0	29,691	46,0	29,978	39,0	29,918	29,0	29,996
14	39,0	30,120	39,0	30,200	42,0	30,132			57,0	29,908	59,0	29,902			64,0	29,690	59,0	29,731	46,0	30,031	40,0	29,896	29,0	29,961
15	37,0	30,130	37,0	30,094	40,0	30,072	58,0	29,959	60,0	29,931	59,0	29,918	69,0	29,888	69,0	29,696	59,0	29,801	46,0	30,011	39,0	29,893	29,0	29,994
16	37,0	30,110	39,0	30,094	41,0	30,053	55,0	29,958	59,0	29,932			69,0	29,893	69,0	29,696	59,0	29,858	47,0	30,010	39,0	29,893	29,0	30,111
17	39,0	30,093	39,0	30,090	44,0	30,122	55,0	30,024	60,0	29,966	60,0	29,907	69,0	29,903	69,0	29,693	60,0	29,858	47,0	30,007	39,0	29,893	29,0	29,993
18	39,0	30,060	39,0	30,090	42,0	30,060	56,0	30,018	60,0	29,966	60,0	29,906	69,0	29,908	69,0	29,696	59,0	29,851	47,0	30,001	39,0	29,893	29,0	29,979
19	39,0	30,140	39,0	30,090	42,0	30,027	56,0	30,041	60,0	29,966	60,0	29,906	69,0	29,908	69,0	29,696	59,0	29,851	47,0	30,001	39,0	29,893	29,0	29,979
20	39,0	30,150	39,0	30,116	42,0	30,027	56,0	30,049	60,0	29,966	60,0	29,903	69,0	29,908	69,0	29,696	59,0	29,851	47,0	30,001	39,0	29,893	29,0	29,979
21	39,0	30,067	39,0	30,100	42,0	30,000	56,0	30,000	60,0	29,966	60,0	29,903	69,0	29,908	69,0	29,696	59,0	29,851	47,0	30,001	39,0	29,893	29,0	29,979
22	39,0	30,073	39,0	30,100	42,0	30,000	56,0	30,000	60,0	29,966	60,0	29,903	69,0	29,908	69,0	29,696	59,0	29,851	47,0	30,001	39,0	29,893	29,0	29,979
23	39,0	30,090	39,0	30,090	42,0	30,000	56,0	30,000	60,0	29,966	60,0	29,903	69,0	29,908	69,0	29,696	59,0	29,851	47,0	30,001	39,0	29,893	29,0	29,979
24	39,0	30,090	39,0	30,090	42,0	30,000	56,0	30,000	60,0	29,966	60,0	29,903	69,0	29,908	69,0	29,696	59,0	29,851	47,0	30,001	39,0	29,893	29,0	29,979
25	39,0	30,090	39,0	30,090	42,0	30,000	56,0	30,000	60,0	29,966	60,0	29,903	69,0	29,908	69,0	29,696	59,0	29,851	47,0	30,001	39,0	29,893	29,0	29,979
26	39,0	30,090	39,0	30,090	42,0	30,000	56,0	30,000	60,0	29,966	60,0	29,903	69,0	29,908	69,0	29,696	59,0	29,851	47,0	30,001	39,0	29,893	29,0	29,979
27	39,0	30,090	39,0	30,090	42,0	30,000	56,0	30,000	60,0	29,966	60,0	29,903	69,0	29,908	69,0	29,696	59,0	29,851	47,0	30,001	39,0	29,893	29,0	29,979
28	39,0	30,090	39,0	30,090	42,0	30,000	56,0	30,000	60,0	29,966	60,0	29,903	69,0	29,908	69,0	29,696	59,0	29,851	47,0	30,001	39,0	29,893	29,0	29,979
29	39,0	30,090			42,0	30,000	56,0	30,000	60,0	29,966	60,0	29,903	69,0	29,908	69,0	29,696	59,0	29,851	47,0	30,001	39,0	29,893	29,0	29,979
30	39,0	30,090			42,0	30,000	56,0	30,000	60,0	29,966			69,0	29,908	69,0	29,696	59,0	29,851	47,0	30,001	39,0	29,893	29,0	29,979
31	39,0	30,090			42,0	30,000			60,0	29,966			69,0	29,908	69,0	29,696			47,0	30,001			29,0	29,979

Daily Mean Height of the Thermometer and Barometer for the Year 1860

Day.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.	
	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.
	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.
1	29.5	30.112	29.5	30.132	29.1	30.148	50.8	29.991	59.2	29.990	66.3	29.983	69.3	29.911	64.3	29.885	68.0	29.898	57.0	29.994	46.0	30.078	29.7	30.121
2							50.5	30.001	59.3	29.997	67.0	29.947	71.6	29.934	64.0	29.949	66.0	29.879	46.0	29.962	44.0	30.059	32.0	30.332
3	29.3	30.134	27.4	30.021	31.1	30.097	47.8	29.972	59.0	29.979	64.0	29.958			60.7	29.969	63.7	29.991	47.2	29.912	34.2	30.040	29.7	30.197
4	29.2	30.184	29.1	30.008	30.0	30.039	44.3	29.977	59.1	29.982	66.7	29.968	71.2	29.891	64.0	29.986	66.0	29.916	44.0	29.928	36.1	30.017	27.0	30.264
5	29.3	30.178	30.1	30.023	31.1	30.091	44.3	29.943	59.0	29.955	66.0	29.954			64.0	29.992	64.0	29.919	46.4	29.778	36.0	30.080		
6	29.3	30.181	30.0	30.048	30.3	30.093	47.0	29.996	58.0	29.999	66.0	29.992	69.3	29.912	64.3	29.992	64.0	29.951	44.0	29.776				
7	29.2	30.169	31.0	30.014	30.3	30.093	50.0	30.011	54.1	30.002	66.0	29.994	67.3	29.911	64.2	29.979	67.0	29.945	46.2	29.787			30.0	30.239
8	29.3	30.189	29.1	30.017	30.3	30.084	50.7	29.994	59.1	29.944	64.3	29.957	66.3	29.953	67.1	29.996							30.2	30.030
9	29.3	30.152	30.0	30.012			49.4	29.960	59.0	29.917	66.3	29.917	70.3	29.905	64.2	29.968	64.0	29.931	47.0	29.990				
10	29.2	30.140	30.1	30.105	30.0	30.131			59.0	29.999	66.1	29.951	70.1	29.979	66.1	29.980	64.0	29.900			37.0	30.003		
11	29.2	30.132	29.1	30.113	31.0	30.102	47.0	29.979	58.0	29.999	66.0	29.960	69.0	29.976	66.0	29.986	66.0	29.997			29.0	30.060	34.0	30.179
12	29.0	30.088	29.3	30.102	30.0	30.091			58.0	30.007	66.3	29.963	69.3	29.962	66.0	29.968	66.0	29.994			32.5	30.096	32.0	30.176
13	29.0	30.030	30.1	30.103	30.3	30.084			58.2	30.019	66.3	29.979	67.3	29.911	64.0	29.967	64.0	29.964	41.3	30.079	29.0	30.073	29.0	30.151
14	29.2	30.132	30.0	30.121	30.3	30.111			58.3	29.988	66.7	29.950	64.7	29.942	64.7	29.992			42.0	30.059	29.3	30.050	32.0	30.139
15	29.2	30.145	27.3	30.132	30.4	30.098	50.0	30.017	59.3	29.999			65.3	29.991	64.0	29.992					30.3	30.092	33.0	30.176
16	29.0	30.145					50.0	30.003	59.3	29.997	66.7	29.799	67.3	29.963	64.0	29.984	64.0	30.001	43.5	30.079	30.3	30.058	32.4	30.179
17	29.2	30.149	29.0	30.149	30.7	30.139	50.0	29.991	59.3	29.981	66.0	29.779	69.3	29.961	64.0	29.992	64.7	29.958	37.0	30.079	29.7	30.042	29.0	30.097
18			29.0	30.173	30.3	30.078	50.3	29.992	59.3	29.999	67.3	29.984	69.7	29.961	64.1	29.995	64.1	29.980	44.1	30.091	30.3	30.068	34.0	30.096
19			29.0	30.140	30.3	30.092	50.3	29.982	59.3	29.996	66.4	29.969	69.7	29.974	64.0	29.998	64.0	29.980	43.0	30.072	30.3	30.067	34.0	30.093
20	29.0	30.121	29.1	30.139	31.3	30.079	50.3	29.999	59.3	29.995			70.0	29.971	67.3	29.995	70.0	29.993	44.3	30.093	30.3	30.105	37.0	30.084
21			30.0	30.132	30.3	30.090	49.3	29.994	59.3	29.980	66.3	29.982	69.3	29.963	64.3	29.994	64.3	29.986	43.1	29.996	30.3	30.102	37.0	30.078
22	29.0	30.101	29.1	30.161	30.1	30.035	50.3	29.994			66.3	29.991	69.3	29.959	64.3	29.994	64.3	29.963			29.3	30.079	37.0	30.073
23	29.2	30.081			30.0	30.057	50.0	30.004	59.3	29.959	66.3	29.949	69.3	29.991	64.0	29.979	64.0	29.992			30.3	30.073	37.0	30.082
24	29.2	30.092	30.0	30.151	30.3	30.081	50.3	29.991	59.0	29.956	66.3	29.991	69.3	29.993	64.0	29.993	64.3	29.999					37.0	30.094
25	29.2	30.121	29.1	30.171	30.3	30.094	50.3	29.971	59.3	29.984	66.3	29.991	69.3	29.989	64.0	29.994	64.3	29.977	42.0	29.999	30.3	30.076	37.0	30.096
26	29.2	30.121	29.0	30.165	30.3	30.102	47.3	29.999	59.3	29.997	66.3	29.994			64.3	29.992	64.3	29.993	43.0	29.993			37.0	30.095
27	29.2	30.091	30.0	30.160	30.3	30.097	47.3	29.988	59.3	29.963	66.3	29.993	69.3	29.997	64.3	29.992	64.3	29.991	44.3	29.999	32.0	30.073	37.0	30.094
28	29.2	30.092	30.0	30.140	30.3	30.097	47.3	29.988	59.3	29.963	66.3	29.993	69.3	29.997	64.3	29.992	64.3	30.001	46.0	30.093	30.3	30.053		
29	29.2	30.091			30.3	30.091	47.3	29.988	59.3	29.963	66.3	29.993	69.3	29.997	64.3	29.992	64.3	30.001			29.3	30.079	37.0	30.093
30	29.2	30.088			30.3	30.082	46.3	29.979	59.3	29.973	66.3	29.993	69.3	29.991	64.3	29.992	64.3	30.001					37.0	30.093
31	29.2	30.196			30.3	30.085			59.3	29.993			69.3	29.988	64.3	29.988	64.3	29.999					37.0	30.092

Daily Mean Height of the Thermometer and Barometer for the Year 1831.

Day.	January.		February.		March.		June.		July.		August.		September.		October.		November.		December.	
	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.
1	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.
2			72,0	30,103		30,009	59,0	29,857	69,3	29,969	65,3	29,792	57,3	29,959	53,4	29,986	46,4	29,997	29,7	30,110
3	42,0	30,079	72,5	30,014	42,0	29,946	59,1	29,938	69,3	29,936	67,3	29,817	60,1	29,959	56,4	29,991	44,3	29,988	28,8	30,114
4	37,5	30,093	70,5	30,019	43,5	30,007	59,0	29,956	69,3	29,945	68,3	29,852	62,0	29,957	57,0	29,992	44,0	29,988	29,7	30,097
5	41,0	30,097	67,4	30,038	40,5	30,009	59,7	29,943	69,1	29,789	65,8	29,842	62,5	29,971	55,5	29,985	45,5	29,992		
6	38,5	30,066	64,8	30,011	41,0	30,020	57,5	29,993	69,0	29,824	69,3	29,874	62,7	29,956	54,0	29,982	44,0	29,992	27,5	30,059
7	39,0	30,033	70,0	30,020	39,5	30,025	56,7	29,999	69,1	29,887	69,7	29,881			56,0	29,995	40,7	29,981	24,0	29,949
8	37,0	30,014	68,4	30,030	42,5		59,5	29,955	68,0	29,815			63,5	29,979	54,0	29,974	46,7	29,982	27,5	29,994
9	39,5	30,111	71,0	30,029					67,0	29,959			62,1	29,941	54,1	29,955	44,0	29,973	27,0	30,007
10	37,5	30,139	70,7	30,003	70,0	30,021			70,0	29,961	69,8	29,849	60,0	29,921	55,0	29,960	39,1	29,997	29,1	30,009
11							59,0	29,957	69,0	29,849			58,0	30,079	54,5	29,998	37,5	29,947	29,1	30,050
12													57,0	30,086			37,0	29,946	27,0	30,070
13	37,0	30,195			47,7	30,001	61,0	29,849	64,7	29,951			57,0	30,086			37,0	29,946	27,0	30,070
14	39,0	30,205			45,6	30,006	62,5	29,798	67,3	29,955	61,0	29,980	60,1	30,029	50,5	29,989	38,5	29,992	27,0	30,054
15	37,5	30,203			47,0	29,982			69,5	29,930	66,4	29,843	61,5	29,943	54,5	29,960	38,0	29,968	27,5	30,054
16	38,0	30,161			46,5	30,009	59,0	29,799	69,5	29,867	66,4	29,929	60,7	29,916	50,4	29,952	39,7	30,000	24,0	30,064
17	37,5	30,080	71,4	30,177	46,5	30,076	58,7	29,838	69,0	29,897	67,5	29,903	61,1	29,892	50,0	29,949	39,4	30,078	24,5	30,040
18	39,5	30,144	71,0	30,201	45,5	30,057	60,1	29,798	69,7	29,900	71,4	29,963	63,5	29,861	54,5	29,864				
19	39,0	30,126	69,5	30,154	46,5	30,019	59,5	29,784	68,1	29,942	69,5	29,859	60,5	29,871	54,0	29,897	37,5	30,060	28,0	30,030
20	39,5	30,134	70,5	30,089	45,0	30,041	57,5	29,858	68,1	29,965	68,5	29,788	65,0	29,897	55,5	29,952	36,7	29,992		
21	37,5	30,102					59,5	29,925	69,5	29,966	69,7	29,993			54,0	29,917	37,5	30,007		
22	37,4	30,112	68,0	30,069	47,5	30,053	59,0	29,953	69,5	29,962	69,5	29,972	60,0	29,971	53,1	29,959	36,0	30,000		
23	37,7	30,079	65,5	30,114					69,1	29,973	67,4	29,959					36,7	30,046	27,5	30,064
24	37,4	30,034	71,0	30,127	50,0	30,053	59,5	29,959	69,0	29,964	69,5	29,946	64,7	29,936	54,7	29,972			29,2	30,092
25	40,0	30,037	69,5	30,089	47,5	30,051	59,0	29,932	69,5	29,947			62,5	29,932	56,5	29,980	37,5	29,959	27,5	30,059
26	39,0	30,037	68,5	30,069	44,5	30,000	59,4	29,921	69,1	29,950	69,5	29,955	62,0	29,954	55,5	29,972	37,5	29,997	27,5	30,054
27			66,5	30,106	46,5	30,060	57,7	29,947	69,5	29,943	69,5	29,965	64,5	29,972	55,5	29,963	38,7	29,988		
28	37,0	30,106	66,5	30,057	47,5	30,069	57,5	29,939	64,5	29,953	64,5	29,949			55,5	29,969	40,5	30,035		
29	36,0	30,170	68,5	30,052	47,5	30,091	59,7	29,959	63,5	29,960	66,0	29,944	67,5	29,959	54,5	29,951	39,7	30,064		
30	37,5	30,149	71,4	30,055			59,5	29,951	71,5	29,956	65,5	29,939	66,5	29,949	54,0	30,046	38,5	30,075	29,5	30,150
31	37,5	30,155			50,5	30,050	57,5	29,979	69,5	29,969	67,3	29,932	66,5	29,963	54,1	30,039	39,5	30,098	28,5	30,098
32	38,5	30,155			48,5	30,051	62,1	29,951	64,7	29,957	66,0	29,901	62,5	29,959	54,0	30,022	39,7	30,092	27,5	30,056
33	34,5	30,099			49,5	30,099			68,7	29,936	65,7	29,951			52,1	30,049			29,5	30,004

Daily Mean Heights of the Thermometer and Barometer for the Year 1832.

Day.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.	
	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.
	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.
1			39,7	29,971	39,5	29,139	46,0	29,337	54,5	29,914	57,3	29,651	64,0	29,806	62,7	29,969	60,5	29,933			54,6	29,929	39,3	30,140
2	37,0	29,843	37,8	30,041	44,5	30,092	50,9	29,964			60,0	29,743	66,8	29,749	67,1	29,979	60,5	29,949			54,0	29,929	39,6	30,113
3	39,5	30,019	37,9	30,047	40,0	30,124	46,1	29,826			64,0	29,647	66,0	29,918	65,0	30,008	57,5	29,940	47,6	29,995	52,0	29,975	39,2	30,197
4	42,2	30,063	39,0	30,119	44,0	30,075	54,0	29,954	58,5	29,991	61,0	29,856			66,0	30,011			49,7	29,918	51,0	30,066	38,0	30,208
5	39,0	30,075	39,0	30,109	44,7	29,933	49,7	29,966			59,8	29,954	64,0	29,890	67,8	30,062	56,0	29,999	46,7	29,954	50,6	29,986	37,7	30,168
6	37,4	30,154	39,7	30,072	44,6	30,070	50,4	29,997	56,6	29,939	59,6	29,895	63,7	29,899	67,2	30,068	57,0	29,999	47,2	29,994	49,2	30,103	38,0	30,197
7	37,1	30,162			45,1	30,079	48,0	29,991	56,6	29,973	61,6	29,939	66,4	29,924	66,1	30,064	56,7	29,913	47,6	29,934	49,0	30,108	37,1	30,197
8	37,6	30,124	39,6	30,112	44,6	30,094	50,2	29,939	56,2	29,898	62,0	29,911	66,0	29,971	64,1	29,992	56,2	29,939	46,6	29,976	48,4	29,993	37,7	30,291
9	37,8	30,134	39,2	30,127	45,2	30,033	49,6	29,981			63,1	29,916	66,0	29,980	64,1	29,962	56,2	29,903	46,1	29,967	47,8	30,070	37,6	30,317
10	39,2	30,153	39,6	30,113	45,2	30,086	49,3	29,979	56,2	29,967	63,2	29,957	65,8	29,932	64,0	29,960	56,0	29,908	47,1	29,899	47,7	30,084	37,6	30,319
11	37,4	30,094	40,0	30,126	45,4	30,092	51,6	29,969	57,6	29,969	63,0	29,795	65,0	29,901	63,4	29,962	56,2	29,843	47,6	29,882	47,4	30,023	37,6	30,291
12	37,6	30,085	39,7	30,110	44,2	30,059	50,6	29,980	57,6	29,997	62,6	29,932	65,2	29,974	62,6	29,977	56,0	29,920	47,4	29,887	47,0	30,049	38,0	30,310
13	39,0	30,043	39,0	30,071	46,0	30,069	54,0	29,974					66,0	29,970	64,6	29,978	56,7	29,916	47,7	29,849	47,0	30,096	37,6	30,289
14	39,0	30,034			46,0	30,033	54,6	29,933	58,6	29,933	63,0	29,930	66,7	29,951	64,6	29,934	56,6	29,919	46,6	29,864	47,6	30,089	38,6	30,342
15	39,4	30,098	39,7	30,072	46,6	30,077	55,0	29,902	58,3	29,907	63,0	29,991	66,4	29,781	65,1	29,866	56,6	29,933	46,6	29,837	46,6	29,979	38,7	30,337
16	37,7	30,021	39,6	30,123	46,1	30,049	54,2	29,943					65,6	29,909	65,2	29,873	56,6	29,876	47,0	29,899	47,4	29,964	38,1	30,333
17			40,6	30,166	45,6	30,029	54,6	29,979	58,1	29,919	63,1	29,907	65,0	29,949	65,2	29,942	56,6	29,943	46,6	29,894	47,6	29,923	37,7	30,347
18	37,6	30,134			44,7	30,033	54,2	29,932	57,4	29,910	63,0	29,942	66,0	29,933	64,1	29,936	56,2	29,944	46,6	29,857	47,6	29,954	37,6	30,342
19	38,0	30,179			44,7	30,036	57,6	29,913	57,2	29,934	63,2	29,960	66,6	29,903	64,6	29,939	57,0	29,943	46,6	29,892	47,7	29,960	37,6	30,295
20	37,2	30,172	42,1	30,197	47,0	30,109	58,2	29,977	56,6	29,998			66,6	29,939	64,6	29,959	56,6	29,962	46,6	29,934	47,7	29,911	37,6	30,299
21	39,0	30,173	42,6	30,117					58,6	29,951	63,2	29,956	66,2	29,937	65,0	29,969	56,7	29,943	46,6	29,903	47,6	29,969	38,7	30,319
22	39,4	30,154	39,6	30,095	45,2	30,024	56,2	29,916	57,6	29,794	63,6	29,980	67,2	29,937	66,7	29,952	56,2	29,956	46,6	29,924	46,4	30,015	37,1	30,345
23	39,6	30,079	41,4	30,092	45,6	30,004	54,6	29,919	56,7	29,797	63,2	29,956	66,6	29,933	66,6	29,937	57,0	29,934	46,6	29,904	45,1	30,029	37,6	30,337
24	39,6	30,099	40,4	30,060	45,6	30,018			56,6	29,950	62,6	30,079	66,2	29,936	66,4	29,974	56,6	29,959	46,2	29,934	46,2	30,016	37,6	30,309
25	39,6	30,074	39,7	30,054	45,6	30,007			55,6	29,939	62,6	29,939	66,4	29,974	64,6	29,955	56,6	29,915	46,6	29,895	46,6	30,043	37,4	30,339
26	39,6	30,038	39,6	30,086	45,6	29,986	53,6	30,027	56,6	29,961	62,6	29,959	66,2	29,941	65,2	29,961	56,6	29,953	46,2	29,903	46,6	30,033	37,6	30,328
27	39,2	30,091	39,2	30,079	45,2	30,004	53,6	29,951	56,6	29,951	62,6	29,926	66,6	29,926	65,6	29,941	56,7	29,977	46,1	29,899	46,2	30,007	37,7	30,348
28	39,4	30,103	39,4	30,137	44,7	29,991	53,6	29,963	56,6	29,939	62,6	29,934	66,6	29,905	66,2	29,923	56,6	29,950	46,6	30,013	45,4	30,115	37,6	30,340
29	39,6	30,097			46,6	29,941	54,7	29,963	56,7	29,939	62,6	29,968	66,6	29,941			56,6	29,939	46,7	29,953	47,0	30,080	37,6	30,330
30	39,7	30,099			46,6	29,994	54,6	29,968	56,6	29,941	62,6	29,937	66,2	29,937	66,1	29,986			46,6	29,954	47,2	30,054	37,6	30,321
31					46,6	29,996			56,6	29,908			66,6	29,969	66,6	29,959			46,4	29,899			36,6	30,339

Daily Mean Heights of the Thermometer and Barometer, with Fall of Rain, for the Year 1823.

Day.	January.		February.		March.		April.		May.		June.			July.			August.			September.			October.			November.			December.		
	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.
	°	Inc.	°	Inc.	°	Inc.	°	Inc.	°	Inc.	°	Inc.	Inc.	°	Inc.	Inc.	°	Inc.	Inc.	°	Inc.	Inc.	°	Inc.	Inc.	°	Inc.	Inc.	°	Inc.	Inc.
1	47	30,140	45	30,060	49	30,130	44	30,020	48	29,970	59	29,790		66	30,090	0,01	66	30,020		63	30,080		58	30,030		50	30,010		41	30,070	
2	47	30,110	47	30,160	50	30,080	44	30,010	49	30,040	59	29,780		65	29,990	0,06	65	29,910	0,12	67	30,010		59	30,040		52	30,100	0,24	44	30,080	
3	45	30,140	49	30,160	48	30,070	45	30,020	50	30,020	59	29,820		64	30,000		66	30,000		64	30,020		59	30,020	0,07	52	30,060	0,04	44	30,020	
4	47	30,140	49	30,040	49	30,030	45	30,020	50	30,030	59	29,850		66	29,990		66	29,960	0,01	64	30,010		59	30,040		52	30,140		43	30,060	
5	46	30,130	49	30,060	49	30,020	45	30,020	50	30,020	59	29,850		67	29,970		66	30,000		64	29,990	0,06	60	30,020		52	30,100		43	30,020	
6	47	30,120	49	30,000	50	30,000	45	30,000	50	30,000	57	29,870	0,07	66	29,980	0,04	65	30,010		63	30,000		60	30,000		52	30,060		43	30,000	
7	47	30,040	49	30,000	50	30,000	45	30,000	50	30,000	57	29,870	0,03	66	29,970		65	30,000		63	30,000		60	30,000		52	30,060		43	30,000	
8	46	30,000	49	30,000	50	30,000	45	30,000	50	30,000	57	29,870	0,02	66	29,970		65	30,000		63	30,000		60	30,000		52	30,060		43	30,000	
9	47	30,120	49	30,000	50	30,000	45	30,000	50	30,000	57	29,870		66	29,970		65	30,000		63	30,000		60	30,000		52	30,060		43	30,000	
10	46	30,130	49	30,000	50	30,000	45	30,000	50	30,000	57	29,870		66	29,970		65	30,000		63	30,000		60	30,000		52	30,060		43	30,000	
11	46	30,130	49	30,000	50	30,000	45	30,000	50	30,000	57	29,870		66	29,970		65	30,000		63	30,000		60	30,000		52	30,060		43	30,000	
12	46	30,130	49	30,000	50	30,000	45	30,000	50	30,000	57	29,870		66	29,970		65	30,000		63	30,000		60	30,000		52	30,060		43	30,000	
13	46	30,130	49	30,000	50	30,000	45	30,000	50	30,000	57	29,870		66	29,970		65	30,000		63	30,000		60	30,000		52	30,060		43	30,000	
14	46	30,130	49	30,000	50	30,000	45	30,000	50	30,000	57	29,870		66	29,970		65	30,000		63	30,000		60	30,000		52	30,060		43	30,000	
15	46	30,130	49	30,000	50	30,000	45	30,000	50	30,000	57	29,870		66	29,970		65	30,000		63	30,000		60	30,000		52	30,060		43	30,000	
16	46	30,130	49	30,000	50	30,000	45	30,000	50	30,000	57	29,870		66	29,970		65	30,000		63	30,000		60	30,000		52	30,060		43	30,000	
17	46	30,130	49	30,000	50	30,000	45	30,000	50	30,000	57	29,870		66	29,970		65	30,000		63	30,000		60	30,000		52	30,060		43	30,000	
18	46	30,130	49	30,000	50	30,000	45	30,000	50	30,000	57	29,870		66	29,970		65	30,000		63	30,000		60	30,000		52	30,060		43	30,000	
19	46	30,130	49	30,000	50	30,000	45	30,000	50	30,000	57	29,870		66	29,970		65	30,000		63	30,000		60	30,000		52	30,060		43	30,000	
20	46	30,130	49	30,000	50	30,000	45	30,000	50	30,000	57	29,870		66	29,970		65	30,000		63	30,000		60	30,000		52	30,060		43	30,000	
21	46	30,130	49	30,000	50	30,000	45	30,000	50	30,000	57	29,870		66	29,970		65	30,000		63	30,000		60	30,000		52	30,060		43	30,000	
22	46	30,130	49	30,000	50	30,000	45	30,000	50	30,000	57	29,870		66	29,970		65	30,000		63	30,000		60	30,000		52	30,060		43	30,000	
23	46	30,130	49	30,000	50	30,000	45	30,000	50	30,000	57	29,870		66	29,970		65	30,000		63	30,000		60	30,000		52	30,060		43	30,000	
24	46	30,130	49	30,000	50	30,000	45	30,000	50	30,000	57	29,870		66	29,970		65	30,000		63	30,000		60	30,000		52	30,060		43	30,000	
25	46	30,130	49	30,000	50	30,000	45	30,000	50	30,000	57	29,870		66	29,970		65	30,000		63	30,000		60	30,000		52	30,060		43	30,000	
26	46	30,130	49	30,000	50	30,000	45	30,000	50	30,000	57	29,870		66	29,970		65	30,000		63	30,000		60	30,000		52	30,060		43	30,000	
27	46	30,130	49	30,000	50	30,000	45	30,000	50	30,000	57	29,870		66	29,970		65	30,000		63	30,000		60	30,000		52	30,060		43	30,000	
28	46	30,130	49	30,000	50	30,000	45	30,000	50	30,000	57	29,870		66	29,970		65	30,000		63	30,000		60	30,000		52	30,060		43	30,000	
29	46	30,130			50	30,000	45	30,000	50	30,000	57	29,870		66	29,970		65	30,000		63	30,000		60	30,000		52	30,060		43	30,000	
30	46	30,130			50	30,000	45	30,000	50	30,000	57	29,870		66	29,970		65	30,000		63	30,000		60	30,000		52	30,060		43	30,000	
31	46	30,130			50	30,000			50	30,000				66	29,970		65	30,000					60	30,000					43	30,000	

Daily Mean Heights of the Thermometer, Barometer and Hygrometer, with Falls of Rain, for the Year 1804.

Day.	January.			February.			March.			April.			May.			June.			July.		
	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.
	°	Inches.	Inches.	°	Inches.	Inches.	°	Inches.	Inches.	°	Inches.	Inches.	°	Inches.	Inches.	°	Inches.	Inches.	°	Inches.	Inches.
1	29,1	30,172		29,5	30,114		31,5	30,105		39,0	30,027		49,5	29,983		56,5	29,942		58,5	29,914	
2	29,7	30,177		34,5	30,035		37,5	30,142		39,1	30,033		44,5	29,917		61,5	29,909		63,5	29,904	
3	29,0	30,188		32,5	30,172		32,0	30,150		40,1	30,051		45,5	29,950		60,5	29,963		63,5	29,956	0,08
4	29,8	30,198		30,5	30,159		31,0	30,114		36,5	30,050		47,5	29,950		63,5	29,980		65,5	29,980	
5	29,0	30,165		31,5	30,089		29,5	30,090		34,1	30,000		49,5	29,967		65,5	29,914		70,5	29,911	0,27½
6	29,8	30,146		31,5	30,105		27,5	30,060		35,1	30,018		46,5	29,973		59,7	29,979	0,46	69,5	29,969	
7	29,5	30,145		32,5	30,133		24,5	30,093		34,5	30,016		47,5	29,967		61,5	29,972	0,12	68,5	29,950	
8	29,4	30,131		32,5	30,076	0,51½	29,5	30,009		36,5	30,000		50,5	29,915		61,5	29,897		62,1	29,924	0,03½
9	30,1	30,071		29,5	30,072	0,03½	30,5	30,009		36,5	30,030		51,5	29,914		60,5	29,860		59,5	29,929	
10	31,5	30,066		32,5	30,076	0,08	30,5	30,024		34,5	30,052		54,5	29,944		60,5	29,912		59,5	29,979	
11	30,0	30,137		32,5	30,091		31,5	30,065		35,1	30,039		54,5	29,891		62,5	29,879		57,1	29,975	
12	30,1	30,205		33,5	30,201		31,5	30,093		37,5	29,990		56,5	29,859		63,5	29,880	0,06½	59,5	29,991	
13	30,7	30,207		30,5	30,172		31,5	30,076		36,5	29,949		60,5	29,900		65,5	29,893		60,5	29,966	0,07
14	30,7	30,190		30,5	30,173		29,5	30,128		36,1	29,931		61,5	29,955		63,5	29,879		61,5	29,931	
15	30,2	30,180		34,1	30,171		32,5	30,103		37,1	29,869		61,5	29,944		63,5	29,926		61,1	29,949	
16	30,0	30,236		30,5	30,166		33,5	30,062		39,0	29,891		62,5	29,926		64,5	29,867	0,07½	60,7	29,931	
17	30,0	30,174		32,5	30,145		34,5	30,009	0,03½	37,5	29,918		60,1	29,799		66,7	29,923		60,5	29,948	
18	30,1	30,197		33,5	30,145		35,1	30,061		39,5	30,011		64,1	29,793		68,5	29,897		61,5	29,962	
19	30,5	30,174		34,5	30,202		34,5	30,079		40,5	30,041		62,5	29,901		70,1	29,847		60,5	29,965	
20	30,5	30,179		35,5	30,209		36,5	30,076		39,7	30,023		59,5	29,954		68,5	29,899	0,13	59,5	29,995	0,03½
21	30,4	30,057		36,5	30,199		37,5	30,053		41,5	30,034		58,5	29,979		66,5	29,932		59,5	29,969	
22	31,5	30,147		33,5	30,189		36,5	30,033		40,5	30,040		60,1	29,936		68,5	29,902				
23	30,5	30,176		34,1	30,123		33,5	30,000		39,5	30,008		59,5	29,942		69,5	29,904	0,14	59,5	29,965	
24	31,5	30,201		33,5	30,071		34,5	29,943		39,5	30,052		59,5	29,954		68,5	29,901		60,5	29,993	
25	32,5	30,155		33,1	30,095		36,5	29,954		39,5	30,053		59,5	29,955		70,1	29,896		59,1	29,997	0,55
26	32,5	30,193		32,7	30,108		36,1	29,949		40,1	30,019		59,5	29,963		70,1	29,921		59,7	29,966	
27	31,5	30,206		32,5	30,070		37,5	30,023		40,1	30,030		60,5	29,959		69,7	29,942		59,5	29,972	
28	32,5	30,233		31,1	30,050		36,5	30,052		39,5	30,020		60,5	29,990		71,1	29,929		57,1	29,959	0,03
29	33,7	30,179		31,5	30,082		36,5	30,039		41,5	30,070		61,5	29,993		70,5	29,899		57,7	29,961	
30	33,0	30,121					37,5	30,052		43,5	30,007		59,5	29,959		69,1	29,859		59,5	29,917	0,09
31	32,5	30,145					39,5	30,005					59,5	29,874					60,1	29,951	

Daily Mean Heights of the Thermometer, Barometer and Hygrometer, with Fall of Rain, for the Year 1804, continued.

Day.	August.					September.					October.					November.					December.				
	Thermometer.	Barometer.	Hygrometer.		Fall of Rain.	Thermometer.	Barometer.	Hygrometer.		Fall of Rain.	Thermometer.	Barometer.	Hygrometer.		Fall of Rain.	Thermometer.	Barometer.	Hygrometer.		Fall of Rain.	Thermometer.	Barometer.	Hygrometer.		Fall of Rain.
	°	Inches.	Dry.	Damp.	Ins.	°	Inches.	Dry.	Damp.	Ins.	°	Inches.	Dry.	Damp.	Ins.	°	Inches.	Dry.	Damp.	Ins.	°	Inches.	Dry.	Damp.	Ins.
1	69,8	29,883				67,0	29,980		6,0	0,08	57,0	29,814		4,0		37,0	30,007		2d		29,0	30,340		7,0	
2	67,1	29,838				68,1	29,923		6,0		50,0	29,826	6,7			39,0	30,012		10,0						0,175
3	69,0	29,980			0,01	67,0	29,936	6,7			55,4	29,943		11,0		41,0	29,974		2,0		37,0	30,341	8,0		0,02
4	69,0	29,949			0,01	67,0	29,968			0,55	49,0	29,968	17			44,0	29,978	11			37,0	30,330		3d	0,03
5	68,0	29,892			0,01	64,0	29,933	9,1		0,30	50,0	29,892		2,4		43,0	29,903	0,1			29,0	30,144		10,0	0,005
6	68,0	29,842				62,0	29,977	3,9		0,08	50,0	29,897	18			44,0	29,992	17,0			28,0	30,323		11,4	
7	69,0	29,970			0,05	64,0	29,916		13,0	0,04	50,0	29,949		11,0		44,0	29,993	17,0			29,0	30,330	13,5		
8	69,0	29,980			0,07	64,0	29,797	28,0			50,0	30,000	13			43,0	29,977			0,20	29,0	30,122		2,0	0,03
9	68,0	29,901			0,01	60,0	29,901	0,0			48,0	30,015	12,0			43,0	29,999			0,35	24,0	29,948		0,1	
10	65,0	29,901				60,0	29,912	0,7			47,0	29,955		10,0	0,12	41,0	29,993			0,12	24,0	30,111		4,1	
11	65,0	29,934				65,0	29,889	14,0		0,07	46,0	30,000		17,0	0,28	44,0	30,031	23			30,0	30,094	8,7		
12	69,0	29,943			0,16	65,7	29,900	3,0		0,01	48,0	29,999	9,5		0,20	41,7	30,008	17			30,0	30,197		1,0	
13	67,0	29,917			0,01	66,5	29,933	20,0			50,0	29,754		4,0	0,47	39,0	30,007	0,0			27,0	30,075	8,5		0,10
14	67,1	29,974				62,0	29,956		13,0	0,08	44,3	29,793	10,0		0,01	40,0	30,024		4,5		26,0	30,078		3,0	
15	67,0	29,918				62,0	29,939	0,0			46,0	29,901		0,7		39,0	30,041		0,0		23,0	30,199	10,5		
16	66,7	29,930	7,3		1,84	64,0	29,889		10,5	0,07	46,0	29,942		10,0	0,10	40,7	30,058	11,4			27,0	30,189		10,2	
17	65,3	29,914	8,4			65,0	29,939		10,0		47,0	29,957	3,4			41,3	30,138	0,0			27,0	30,085		12,4	
18	66,0	29,923	11,2			66,0	29,970	14,0			50,0	29,949	0,0			42,0	30,149		0,0		23,0	30,189	11		
19	65,0	29,979	0,0			66,0	29,973	7,0			45,0	29,980	0,0			39,0	30,136	22,0			29,0	30,051	4,0		
20	66,7	29,993	0,0			66,0	29,994		1,0	0,00	44,0	29,999	21,0			36,0	30,165	10,0			30,0	30,190		3,0	
21	65,4	29,984		0,0	0,10	66,0	30,019		0,0				10,0			36,0	30,128		17,5		27,0	30,201		10,2	
22	65,0	29,949		0,0	0,20	67,0	29,995		1,0		50,0	29,979				38,0	30,107		0,2		29,0	30,197		13,0	
23	66,1	29,931	0,0		0,02	66,7	30,023				50,0	30,000		15		36,0	30,132	0,2		0,31	29,0	30,207		0,5	
24	63,3	29,914	13,3			66,1	29,980		14,5		50,0	29,979	11			36,7	30,158		1,0	0,22	29,0	30,235			
25	62,4	29,997	12,0			68,1	29,971	0,1		0,00	50,0	30,001	4,0			34,1	30,169		2,0		30,0	30,291		7,0	
26	63,0	29,939			0,08	69,0	29,999	21,0			48,0	29,979	4,0			36,0	30,162		0,5		29,0	30,314		4,0	
27	63,0	29,927	8,5			69,0	29,975		13,7		50,0	29,970	12,0			34,0	30,159	2,1			30,0	30,279		8,0	
28	63,0	29,902	6,5		0,10	69,4	29,905		4,0		48,4	29,995		24		31,0	30,107		1,0	0,50	27,0	30,161	1,0		
29	62,0	29,979	1,0			69,0	29,990	13,7			50,0	30,041	0,0		0,70	31,0	30,156		4,0	0,01	27,0	30,154		1,5	
30	60,7	29,984		13		69,0	29,990		6,5		52,0	30,000		11,3	0,47	31,0	30,161		11,4	0,03	28,0	30,168			
31	60,0	29,992		7,0							50,0	29,960		10,3	1,07						29,0	30,167			

Daily Mean Results of the Thermometer, Barometer and Hygrometer, with Falls of Rain, for the Year 1805.

Day.	January.					February.					March.					April.					May.					June.				
	Thermometer.	Barometer.	Hygrometer.		Fall of Rain.	Thermometer.	Barometer.	Hygrometer.		Fall of Rain.	Thermometer.	Barometer.	Hygrometer.		Fall of Rain.	Thermometer.	Barometer.	Hygrometer.		Fall of Rain.	Thermometer.	Barometer.	Hygrometer.		Fall of Rain.	Thermometer.	Barometer.	Hygrometer.		Fall of Rain.
	°	Inc.	Dry.	Damp.	Inc.	°	Inc.	Dry.	Damp.	Inc.	°	Inc.	Dry.	Damp.	Inc.	°	Inc.	Dry.	Damp.	Inc.	°	Inc.	Dry.	Damp.	Inc.	°	Inc.	Dry.	Damp.	Inc.
1	38,0	29,700				37,7	29,882	10,7			49,0	30,102	8,1			48,8	30,102				46,0	29,863		1,0		59,0	29,901	24		
2						39,4	29,950	7,5			41,0	30,167		5,3		42,4	29,939		12,0					0,5		60,1	29,882	14		
3	37,2	29,910	11,3			39,4	29,899				40,7	30,180		10,5		39,7	29,922	14			42,2	29,967	7,8			60,1	29,891	14,5		
4	42,2	29,991		1,5		39,6	29,890		11		41,1	30,194	6,0			44,0	29,957	9,2			47,8	29,949	14,2			59,1	29,899		11	
5	39,0	29,854	16,5			39,0	30,034	10,1			42,2	30,115	10,0	7,3		45,0	29,953		7,3				4,0			60,2	29,901		4	
6						38,0	30,030	12,2			41,1	30,095		1,8		44,1	29,901	23			47,0	29,888		11		60,1	29,901	17		
7	36,1	29,810	13		0,75	38,0	29,830	14,1			40,2	30,095		17,7		46,2	29,901	13,5								59,0	29,864	7,0		
8	36,0	29,840	14,5		0,25	38,0	29,850	7,8			42,2	30,080		7,8		50,0	29,950		6,5		48,2	29,934		15						
9	38,0	29,840	12,0		0,05	39,0	29,834		13,8		44,0	30,160		4,8		54,2	29,941		12,7		49,4	29,945	22,0			59,4	29,891	22,5		
10	39,0	29,880	21,0		0,85	41,1	29,897		21,0		46,0	30,147		14,0		56,0	29,914		14,0		50,2	29,877		11,0		57,2	29,858		1,5	0,25
11	39,0	29,880	8,6		0,04	40,2	29,788	2,0			46,1	30,150		7,8		58,0	29,905	4,5			52,2	29,881				60,2	29,870	5,0		
12	38,0	29,780	5,0			40,2	29,887		12,1		51,2	29,774	2,0			59,0	29,844		4,8		55,1	29,926	10,0			60,0	29,870	12,5		
13	37,2	29,880	14,0			40,1	29,934		12,5		52,0	29,897	1,0			58,1	29,932	1,0			52,0	29,968		12,8	0,24	59,0	29,893		12,0	
14	38,2	29,790		0,2		41,4	29,950		2,3		53,0	29,731		1,9		59,0	29,917	22,0			54,0	29,911		10,5		58,2	29,893		17	
15	38,2	29,780		7,0		40,2	29,903		2,2		52,0	29,668	2,5			59,0	29,886		2,2		56,0	29,877	8,0			58,0	29,859	25,0		
16	37,2	29,810		10,7		39,0	29,891	2,8			54,0	29,611	12,0			62,0	29,901	6,5			56,0	29,931	1,7							
17	37,2	29,860		10,1	0,21	39,0	29,897		15		50,0	29,697	11			56,2	29,967		15,3		58,2	29,787	9,0			59,2	29,857	13,5		
18	36,2	29,810	0,9			41,0	29,842		12,0		49,2	29,669		5,2		56,0	29,868		22,0		59,1	29,890		21,0		59,0	29,870	11,5		
19	37,1	29,810		10,5		39,0	29,874	16			50,1	29,854	9	0		54,0	29,804		2,0		59,2	29,902				59,1	29,902	5,5		
20	38,2	29,854		9,5		40,0	29,891		4,5		46,0	29,959		12,9		56,0	29,934		2,0		59,0	29,932		13		62,2	29,859	10,5		
21	37,0	29,877	21,5			42,4	29,858		7,0		48,0	29,887		1,0		58,0	29,902	11			58,0	29,896		7		59,2	29,887	8,5		
22	38,0	29,854		8,5		42,2	29,920	9,2			50,0	30,020	10,5			57,1	29,952	14,5			57,0	29,756	14,0			60,0	29,919	21,0		
23	37,0	29,880	20,2	2,7		42,2	29,897		18		50,2	30,060	17,0			58,2	30,000	10,5			59,0	29,748	9,0							
24	38,0	29,901	7,0			40,2	29,891	14			49,0	30,080		19		57,1	29,944	2,9			54,0	29,764	0,5			59,0	29,772	14,0		
25	37,0	29,921		6,5		40,2	29,854		19,1		49,2	30,089	22,0	10,2		54,0	29,957		2,0		56,0	29,768	12		0,1	59,0	29,755		0,1	
26	37,4	29,921				40,2	29,854		8,0		50,2	30,000				57,2	29,930	17,2			57,0	29,678		23		57,2	29,668	12,2		
27	38,0	29,847	24			41,0	29,841	4,6			50,2	30,002		4,7		58,1	29,930		7,0		58,0	29,681	21			57,0	29,672	13,7		
28	37,2	29,854		10,5		42,0	29,814				50,2	30,000		17,0							54,2	29,692	17			57,4	29,707	15		0,25
29	37,0	29,880	8,5								50,0	30,007		19,0		59,0	29,938	2,7			57,0	29,720	7,7			54,2	29,766	9,2		0,05
30	37,0	29,870	3,0								48,2	29,900	2,2			59,2	29,902		14,0		56,2	29,774	19,5							0,40
31	38,0	29,900		1,5							47,2	30,040		21							51,0	29,941		20,0						

Daily Mean Height of the Thermometer, Barometer and Hygrometer, with Fall of Rain, for the Year 1855, continued.

Day.	July.					August.					September.					October.					November.					December.				
	Thermometer.	Barometer.	Hygrometer.		Fall of Rain.	Thermometer.	Barometer.	Hygrometer.		Fall of Rain.	Thermometer.	Barometer.	Hygrometer.		Fall of Rain.	Thermometer.	Barometer.	Hygrometer.		Fall of Rain.	Thermometer.	Barometer.	Hygrometer.		Fall of Rain.	Thermometer.	Barometer.	Hygrometer.		Fall of Rain.
	°	Ins.	Dry.	Damp.	Ins.	°	Ins.	Dry.	Damp.	Ins.	°	Ins.	Dry.	Damp.	Ins.	°	Ins.	Dry.	Damp.	Ins.	°	Ins.	Dry.	Damp.	Ins.	°	Ins.	Dry.	Damp.	Ins.
1	60,1	29,900		13,0	0,72	60,1	29,804	4,0		0,28	60,0	29,926		10,0		50,3	29,980		11		44,1	30,054		6,1		29,0	30,186	3,1		1,28
2	64,0	29,971	5,8			60,1	29,979		9,3		60,0	29,911	8,7			50,5	29,888	8,6			42,3	30,092		3,2		31,0	30,160		6,1	0,08
3	71,0	29,893	10,7			62,1	29,891	8,2			0,0	29,951	9,5			50,0	29,909	10,2			44,1	30,046		2,5		31,0	30,145			0,13
4	68,2	29,872		14,0	0,45	64,0	29,900	2,0			60,0	29,910		15,1		50,2	29,912	1,3			40,0	30,092				29,1	30,172			0,02
5	74,1	29,942	15			62,2	29,973	14,7			60,1	29,910				50,0	29,886	14,0			38,3	29,999				27,2	30,229		10,8	0,02
6	66,4	29,994	2,5			62,0	29,978	6,1		0,28	60,0	29,978		5,0		50,0	29,898	12,3			40,1	29,980		9		0,0	30,130			0,03
7	64,0	29,901	3,2			62,0	29,900	0,8			60,1	29,879		6,2		50,0	29,902	8,8			41,0	30,046		9		0,0	30,133			0,03
8	67,0	29,876				62,0	29,917			3,6						50,0	29,999		17,3	0,40	38,1	29,918		7,7			30,133			0,13
9	65,1	29,914	0,3		0,31	62,1	29,900	1,0			59,1	29,917	14			50,0	29,923		19,0		39,1	29,918		1,5			30,081			0,11
10	64,1	29,913	0,3		0,80	62,2	29,901			5,0	59,1	29,900		25		50,1	29,902		13,0		38,0	29,880					30,078			
11	63,1	29,909	0,2			62,2	29,904	14,0			57,1	29,902		18		51,0	29,896		13,0	0,42	38,0	29,880	5,8				30,080			
12	64,0	29,799	0,2			62,2	29,902	14,3			60,1	29,902		14,7		50,1	29,902		13,0	0,01	38,0	29,880	0				30,080			
13	64,0	29,799	0,2			62,2	29,902	14,3			60,1	29,902				50,1	29,902		13,0	0,01	38,0	29,880	0				30,080			
14	66,0	29,902	0,3			62,2	29,902			4,0	60,1	29,902		13,7		50,1	29,902		13,0	0,24	38,1	29,902		15,1			30,080			
15	66,0	29,902	0,3			62,2	29,902				60,1	29,902				50,1	29,902		13,0		38,1	29,902		8,8			30,080			
16	66,0	29,902	0,3			62,2	29,902				60,1	29,902				50,1	29,902		13,0		38,1	29,902		8,8			30,080			
17	66,0	29,902	0,3			62,2	29,902				60,1	29,902				50,1	29,902		13,0		38,1	29,902		8,8			30,080			
18	66,0	29,902	0,3			62,2	29,902				60,1	29,902				50,1	29,902		13,0		38,1	29,902		8,8			30,080			
19	66,0	29,902	0,3			62,2	29,902				60,1	29,902				50,1	29,902		13,0		38,1	29,902		8,8			30,080			
20	66,0	29,902	0,3			62,2	29,902				60,1	29,902				50,1	29,902		13,0		38,1	29,902		8,8			30,080			
21	66,0	29,902	0,3			62,2	29,902				60,1	29,902				50,1	29,902		13,0		38,1	29,902		8,8			30,080			
22	66,0	29,902	0,3			62,2	29,902				60,1	29,902				50,1	29,902		13,0		38,1	29,902		8,8			30,080			
23	66,0	29,902	0,3			62,2	29,902				60,1	29,902				50,1	29,902		13,0		38,1	29,902		8,8			30,080			
24	66,0	29,902	0,3			62,2	29,902				60,1	29,902				50,1	29,902		13,0		38,1	29,902		8,8			30,080			
25	66,0	29,902	0,3			62,2	29,902				60,1	29,902				50,1	29,902		13,0		38,1	29,902		8,8			30,080			
26	66,0	29,902	0,3			62,2	29,902				60,1	29,902				50,1	29,902		13,0		38,1	29,902		8,8			30,080			
27	66,0	29,902	0,3			62,2	29,902				60,1	29,902				50,1	29,902		13,0		38,1	29,902		8,8			30,080			
28	66,0	29,902	0,3			62,2	29,902				60,1	29,902				50,1	29,902		13,0		38,1	29,902		8,8			30,080			
29	66,0	29,902	0,3			62,2	29,902				60,1	29,902				50,1	29,902		13,0		38,1	29,902		8,8			30,080			
30	66,0	29,902	0,3			62,2	29,902				60,1	29,902				50,1	29,902		13,0		38,1	29,902		8,8			30,080			
31	66,0	29,902	0,3			62,2	29,902				60,1	29,902				50,1	29,902		13,0		38,1	29,902		8,8			30,080			

Daily Mean Height of the Thermometer, Barometer and Hygrometer, with Fall of Rain, for the Year 1856.

Day.	January.				February.				March.				April.				May.				June.			
	Thermometer.	Barometer.	Hygrometer.		Thermometer.	Barometer.	Hygrometer.		Thermometer.	Barometer.	Hygrometer.		Thermometer.	Barometer.	Hygrometer.		Thermometer.	Barometer.	Hygrometer.		Thermometer.	Barometer.	Hygrometer.	
	°	Ins.	Dry.	Damp.	°	Ins.	Dry.	Damp.	°	Ins.	Dry.	Damp.	°	Ins.	Dry.	Damp.	°	Ins.	Dry.	Damp.	°	Ins.	Dry.	Damp.
1	76,5	30,140	5,0		71,9	30,140		22	82,0	30,081		19	82,5	29,900	12		80,8	29,911		1,0	87,5	29,914		14
2	77,7	30,130		7,0	70,0	30,131	11,0		81,2	30,082		13	80,4	29,900	76		81,7	29,920	11,5		86,0	29,918		12,9
3	77,1	30,128	0	0	74,0	30,144		14,5	80,7	30,048	15,0		81,3	29,900		8,1	80,3	29,963	14,7		85,0	29,870		6,0
4	77,1	30,102	5,0		76,0	30,139	9,2		81,7	30,000	0	0	80,3	29,909	9,5		87,2	29,918	6,0		85,5	29,830	22,5	
5	76,0	30,140		1,0	77,2	30,018	0	0	81,0	30,042	9,0		80,0	30,022	15,5		86,7	29,907	10,0		85,7	29,880	12,7	
6	76,1	30,100		0,7	82,1	30,002		5,0	81,5	30,070		6,0	82,8	30,087	5,7		84,7	29,942	11,7				0,0	
7	76,0	30,212	10,5		78,2	30,004		11,2	81,2	30,072		13,0	82,7	30,047	7,8		87,8	29,903	15,7		86,4	29,850		
8	77,0	30,222	5,1		80,0	30,054	1,0		82,0	30,024		12,1	82,0	30,040	8,0		86,0	29,905	8,5		82,8	29,850		
9	77,1	30,190		3,2	76,0	30,009	0	0	84,0	30,000		12,5	83,1	30,003	3,6		87,5	29,909	12,4		83,0	29,901	2,5	
10	76,0	30,192		8,8	82,1	30,047	18,0		80,4	30,100		9,0	83,1	29,900	1,6		86,8	29,910		7,5	84,2	29,937		3,0
11	77,0	30,152	7,9		81,0	30,048		0,5	81,0	30,000		6,5	84,2	29,901	12,5		87,8	29,972	9,5		84,0	29,907		2,5
12	77,0	30,160		18,5	80,2	30,098	3,5		80,2	30,100	9,2		83,0	29,902	10,8		86,0	29,970		11,0	83,7	29,901	7,2	
13	74,0	30,160	1,2		76,2	30,122	10		81,2	30,000		10,2	81,1	29,902	10,7		87,0	29,949	9,5		82,7	29,901	13,5	
14	74,1	30,138		12,0	81,0	30,096	1,3		80,4	30,002		13,8	83,5	29,907	8,4		87,0	29,907	3,0		84,2	29,919	10,0	
15	75,5	30,140	15,8		81,0	30,008		3,0	82,1	30,000		10,4	83,1	29,901		4,7	84,0	29,930		1,0	86,1	29,908		3,2
16	76,0	30,130	18,5		78,2	30,038		9,8	81,2	30,018	6,0		83,0	29,903		5,0	86,5	29,951		6,5	86,0	29,900		10,0
17	76,0	30,145	13,0		79,0	30,091		7,5	80,0	30,000		7,3	83,0	29,972		5,2	86,0	29,960		1,7	86,7	29,878		3,0
18	77,0	30,130	19,2		79,0	30,098		1,2	80,0	30,004	9,3		83,7	29,902		4,7	85,1	29,913	3,5		85,8	29,878	8,4	
19	76,5	30,078	4,0		82,0	30,007	21,5		81,5	30,005		17,6	83,0	29,907		3,9	85,5	29,977		0,3	85,0	29,908	4,2	
20	75,5	30,100		9,0	79,7	30,007	3,0		80,5	30,018	11		83,1	29,909	7,0		86,0	29,906	9,5		86,0	29,907		9,0
21	77,0	30,101	6,2		73,0	30,006		0,2	84,0	29,043	7,3		86,0	29,945	5,8		86,0	29,902		2,0	87,1	29,910		
22	77,0	30,100	15,0		80,0	30,000		17,0	80,0	30,000		2,0	83,0	29,911		6,8	86,0	29,907	12,1		86,0	29,958	1,7	
23	76,7	30,102	2,0		75,0	30,020		12,5	80,0	30,010		3,5	87,0	29,913		7,0	86,0	29,924		1,6	86,0	29,920		0,0
24	76,0	30,101	14,0		79,0	30,100		1,0	80,0	30,070	11		86,0	29,901	7,7		87,0	29,974	12,0		85,0	29,938	21,5	
25	76,0	30,007		6,0	79,1	30,120	0,0		78,5	30,000	2,1		84,0	29,900	12		86,7	29,929	6,4		86,0	29,949	2,8	
26	77,0	30,120	0,1		79,7	30,001		10,3	80,0	30,000		17,6	84,0	29,958	7,7		86,0	29,943		0,7	86,0	29,931	0,0	
27	76,4	30,140	8,5		78,0	30,130	1,0		80,0	30,000	3,5		86,0	29,937		0,7	86,0	29,942	1,0		86,1	29,934		2,2
28	75,1	30,134	4,1		74,0	30,130	0	0	79,1	30,000	1,5		85,0	29,930	8,2		87,0	29,935	9,0		84,1	29,937		1,0
29	76,5	30,127		11,0					79,0	30,100	0	0	85,7	29,977		8,0	87,0	29,933	6,8		84,0	29,931	15,5	
30	76,0	30,116	3,5						80,0	30,041	13		80,0	29,900		4,2	86,0	29,911		2,5				
31	81,1	30,113	0						77,0	30,000		11,0					87,0	29,790	9,5					

Daily Mean Returns of the Thermometer, Barometer and Hygrometer, with Fall of Rain, for the Year 1801, continued.

Day.	July.				August.				September.				October.				November.				December.			
	Thermometer.	Barometer.	Hygrometer.		Thermometer.	Barometer.	Hygrometer.		Thermometer.	Barometer.	Hygrometer.		Thermometer.	Barometer.	Hygrometer.		Thermometer.	Barometer.	Hygrometer.		Thermometer.	Barometer.	Hygrometer.	
	°	Ins.	Dry.	Damp.	°	Ins.	Dry.	Damp.	°	Ins.	Dry.	Damp.	°	Ins.	Dry.	Damp.	°	Ins.	Dry.	Damp.	°	Ins.	Dry.	Damp.
1	80,2	29,[illegible]		14,0	80,1	29,[illegible]		1,0	67,5	29,[illegible]		4,2	50,8	30,[illegible]	1,0		51,6	29,[illegible]	1,0		40,8	29,[illegible]		2,5
2	84,6	29,[illegible]	1,7		80,3	29,[illegible]	0,2		66,0	29,[illegible]	7,9		52,2	30,[illegible]	0,9		53,3	29,[illegible]	0,8		40,0	29,[illegible]		0,4
3	86,6	29,[illegible]		8,9	80,6	29,[illegible]	7,9		62,6	29,[illegible]	17,3		48,2	30,[illegible]		13,0	44,2	29,[illegible]	12,4		39,0	29,[illegible]		2,2
4	86,6	29,[illegible]		1,2	87,3	29,[illegible]	17,5		64,1	29,[illegible]	3,8		49,2	30,[illegible]	2	2,0	48,0	29,[illegible]	3,2		39,7	30,[illegible]		
5	87,5	29,[illegible]		8,5	80,3	29,[illegible]		10,0	66,2	29,[illegible]	11,0	0,1	49,6	30,[illegible]	23	3,5	44,1	29,[illegible]	6,7		39,2	30,[illegible]		
6	87,0	29,[illegible]		10,7	80,0	29,[illegible]		10,0	69,0	29,[illegible]		4,0	50,4	29,[illegible]	1,5	3,0	51,9	29,[illegible]	21,9		37,1	30,[illegible]		4,9
7	83,2	29,[illegible]		10,2	80,4	29,[illegible]	8,0		68,0	29,[illegible]		6,6	54,6	29,[illegible]	17	1,0	55,7	29,[illegible]	24		37,0	30,[illegible]		2,8
8	82,5	29,[illegible]	2,0		84,7	29,[illegible]		12,0	68,1	29,[illegible]	9,9		50,0	29,[illegible]		3,0	53,0	29,[illegible]	15,5		37,7	30,[illegible]	0,2	
9	82,2	29,[illegible]		12	80,4	29,[illegible]	2,3		68,1	29,[illegible]	5,3	2,05	49,0	29,[illegible]	8,7						38,4	30,[illegible]		2,8
10	80,0	29,[illegible]		10,8	80,2	29,[illegible]		15	69,4	29,[illegible]	10,2		49,0	29,[illegible]		15,2	51,6	29,[illegible]	17,1		38,4	30,[illegible]		3,8
11	82,0	29,[illegible]		14,2	80,4	29,[illegible]		13,0	66,2	29,[illegible]	10,0	0,2	49,4	29,[illegible]	13,7						38,7	30,[illegible]		4,4
12	82,6	29,[illegible]	2,5		80,2	29,[illegible]		6,2	66,1	29,[illegible]	2,7		49,4	29,[illegible]	6,0	1,0	49,1	30,[illegible]	9,1		38,2	30,[illegible]		10,0
13	81,6	29,[illegible]	18,5		80,2	29,[illegible]	1,0		66,0	29,[illegible]		8,0	49,1	29,[illegible]	18		50,0	30,[illegible]	12,0		38,0	30,[illegible]		15,2
14	80,0	29,[illegible]		4,8	80,1	29,[illegible]	26		67,2	29,[illegible]		2,4	48,2	29,[illegible]	8,8		54,0	29,[illegible]	2,7					6,9
15	80,8	29,[illegible]		8,3	79,0	29,[illegible]		19,7	66,2	29,[illegible]	8,2		50,2	29,[illegible]	13,1		50,7	29,[illegible]	0,3		39,2	30,[illegible]	10,0	
16	82,0	29,[illegible]		8,8	80,0	29,[illegible]		7,6	66,0	29,[illegible]	4,4		50,4	29,[illegible]	13,4		54,0	30,[illegible]	8,8		39,0	30,[illegible]		4,8
17	80,6	29,[illegible]		2,8	80,0	29,[illegible]		2,0	66,0	29,[illegible]	13		47,0	29,[illegible]	17,2		50,7	30,[illegible]	5,4					
18	80,2	29,[illegible]	4		84,0	29,[illegible]		7,1	67,0	29,[illegible]	4,0	0,1	48,0	29,[illegible]		10,7	49,2	30,[illegible]	2,1		39,4	30,[illegible]	30	
19	82,2	29,[illegible]		7,9	84,2	29,[illegible]		11,5	66,4	29,[illegible]	14	0,1	48,4	29,[illegible]	9,2		49,0	30,[illegible]	13,7		34,0	30,[illegible]		0,3
20	82,2	29,[illegible]		9,0	84,0	29,[illegible]		22,6	67,0	29,[illegible]		10,7	48,2	29,[illegible]	12,7		50,7	30,[illegible]	7,5		36,0	30,[illegible]	4,0	
21	82,0	29,[illegible]		5,8	83,0	29,[illegible]		1,8	68,2	29,[illegible]	9		48,0	29,[illegible]	10,9		52,0	30,[illegible]	11,7		37,2	30,[illegible]		11,8
22	82,2	29,[illegible]		2,3	80,0	29,[illegible]		7,8	68,0	29,[illegible]		1,5	48,0	29,[illegible]		6,1	50,0	30,[illegible]	8,0		37,0	30,[illegible]	9,5	
23	82,4	29,[illegible]		0,1	80,4	29,[illegible]		8,2	67,0	29,[illegible]		1,2	47,0	29,[illegible]	12	7,0	49,0	30,[illegible]	24		37,0	30,[illegible]	1,4	
24	82,2	29,[illegible]		4,2	84,0	29,[illegible]			67,0	29,[illegible]	8,0		47,0	29,[illegible]	11,3		50,0	30,[illegible]	7,8		37,0	30,[illegible]	3,5	
25	80,4	29,[illegible]	3,5		80,3	29,[illegible]	0,9		67,0	29,[illegible]	8,1		47,0	29,[illegible]	4,2		51,0	30,[illegible]	9,9	0,65	36,7	30,[illegible]		11,4
26	80,0	29,[illegible]		2,8	80,0	29,[illegible]	1,4		67,0	29,[illegible]		0,5	47,2	29,[illegible]	9,6		52,0	30,[illegible]	11,5		38,0	30,[illegible]		10,6
27	80,0	29,[illegible]		8,9	80,0	29,[illegible]		14,0	67,0	29,[illegible]		8,0	48,1	29,[illegible]		8,9	50,0	30,[illegible]	12,8	0,05	38,4	30,[illegible]		7,8
28	81,0	29,[illegible]	2,3		80,0	29,[illegible]	0,5		67,0	29,[illegible]		17,0	48,0	29,[illegible]	11,0		48,6	29,[illegible]	1,9		38,1	30,[illegible]		13,0
29	80,0	29,[illegible]	11,3		80,0	29,[illegible]	0,1		67,0	29,[illegible]		15,0	48,0	29,[illegible]	11,0		47,0	29,[illegible]	19		36,0	30,[illegible]	3	
30	80,2	29,[illegible]	0,8		80,0	29,[illegible]	10,4		67,0	29,[illegible]		15,5	48,0	29,[illegible]	10,0						36,0	30,[illegible]	11,3	
31	82,0	29,[illegible]		4,2	80,0	29,[illegible]	0,2						47,0	29,[illegible]		6,0					36,0	30,[illegible]	1,3	
	80,3	29,[illegible]		14,3	80,0	29,[illegible]	19,0																	

Daily Mean Height of the Thermometer, Barometer and Hygrometer, with Fall of Rain, for the Year 1807.

Day.	January. Thermometer.	January. Barometer.	January. Hygrometer.		February. Thermometer.	February. Barometer.	February. Hygrometer.		March. Thermometer.	March. Barometer.	March. Hygrometer.		April. Thermometer.	April. Barometer.	April. Hygrometer.	
	°	Ins.	Dry.	Damp.	°	Ins.	Dry.	Damp.	°	Ins.	Dry.	Damp.	°	Ins.	Dry.	Damp.
1		30,113			76,1	30,142		6,5	83,3	29,877		2,9	87,0	29,964	17,0	
2	76,7	30,071	2,0		76,0	30,[illegible]		9	75,3	30,013		11,7	86,5	29,878	18	
3	76,5	30,132		11	75,7	30,[illegible]	6,5		81,4	30,[illegible]		12,7	88,1	29,[illegible]	13,5	
4	75,2	30,141	2,5		75,0	30,[illegible]	6,5		81,7	30,[illegible]		6,8	89,1	29,[illegible]		3,0
5	77,1	30,107		9,0	76,0	30,[illegible]		1,0	80,4	29,[illegible]		6,7	85,2	29,[illegible]		3,5
6	77,0	30,114	13,2		77,6	30,[illegible]	7,5		86,5	29,[illegible]		28,9	86,8	29,[illegible]	2,0	
7	75,8	30,144		1,2	79,7	30,[illegible]		6	85,0	29,[illegible]	12,3		85,8	29,[illegible]		1,6
8	72,7	30,146	13		79,0	30,[illegible]	12,5						85,4	29,[illegible]	14	
9	79,2	30,154		3	79,4	30,[illegible]		27,5	83,8	29,977		11,9	86,1	29,[illegible]		13
10	79,8	30,165	3		79,0	30,[illegible]	10,5		81,0	30,117	3,6		84,2	29,[illegible]	18,5	
11	80,1	30,[illegible]	17,5		80,1	30,[illegible]		1,0	80,7	29,[illegible]		6	85,0	29,[illegible]		1,0
12	78,2	30,142	5,0		79,7	30,[illegible]		7,7	80,8	29,[illegible]	5,8		82,1	30,[illegible]	11	
13	77,2	30,[illegible]		32	79,5	29,[illegible]	7,7		81,5	29,[illegible]		12	86,0	29,[illegible]	7,5	
14	77,3	30,[illegible]	11		79,8	29,[illegible]			80,7	29,[illegible]		22,5	86,7	29,[illegible]		5,3
15	77,5	30,[illegible]		2,0					82,3	29,[illegible]		10,2	86,5	29,[illegible]		6,0
16	77,2	30,[illegible]		24,0	74,3	29,[illegible]	4		79,7	30,[illegible]		9,8	86,4	29,[illegible]	25	
17	76,6	30,[illegible]	3		74,4	29,[illegible]		3,5	75,0	29,[illegible]		10,0	86,0	29,[illegible]	24	
18					74,5	29,[illegible]	1,5		80,0	29,[illegible]	8,2		86,0	29,[illegible]		3,7
19	76,0	29,[illegible]	7		75,5	29,[illegible]		1,0	80,0	30,[illegible]	14,0		86,0	29,[illegible]	18	
20	77,0	30,[illegible]		18	80,5	30,[illegible]			80,8	30,[illegible]	19		86,0	29,[illegible]		20
21	74,1	30,[illegible]	13						80,8	30,[illegible]	14,5		86,1	29,[illegible]		12
22	76,2	30,[illegible]		19,5	80,4	30,[illegible]	6,0		81,2	30,[illegible]	17,2		86,2	29,[illegible]		23,0
23	78,7	30,[illegible]	6	0	77,2	30,[illegible]		16,5	81,0	30,[illegible]		2,0	86,1	29,[illegible]		1,0
24	76,5	30,[illegible]	15		78,0	30,[illegible]			81,0	30,[illegible]		8,3	81,1	29,[illegible]	19	
25			18		79,7	30,[illegible]	19		80,0	30,[illegible]	18		86,7	29,[illegible]		4,2
26	80,0	29,[illegible]		18	79,7	30,[illegible]	17,3		80,0	30,[illegible]		15,0	81,0	29,[illegible]	24	
27	80,7	30,[illegible]	19		79,0	29,[illegible]		23,0	82,7	30,[illegible]		10	86,0	29,[illegible]	1,7	
28	72,0	29,[illegible]		4,5	79,4	29,[illegible]		1,0	80,0	30,[illegible]		14,7	86,7	29,[illegible]	8,4	
29	78,0	30,[illegible]		19,5					81,0	29,[illegible]	5,3		86,0	29,[illegible]		4,8
30	80,0	30,[illegible]							80,0	29,[illegible]	11,0		86,0	29,[illegible]		4,8
31	82,0	30,171							80,0	29,[illegible]	10,0					

Day.	May. Thermometer.	May. Barometer.	May. Hygrometer.		Fall of Rain.	June. Thermometer.	June. Barometer.	June. Hygrometer.		July. Thermometer.	July. Barometer.	July. Hygrometer.		Fall of Rain.
	°	Ins.	Dry.	Damp.	In.	°	Ins.	Dry.	Damp.	°	Ins.	Dry.	Damp.	In.
1	85,0	29,[illegible]	1,0			86,2	29,[illegible]	19,5		91,2	29,[illegible]	6,0		
2	85,0	29,[illegible]		1,7		86,7	29,[illegible]	23,0		94,3	29,[illegible]		5,3	
3	85,0	29,[illegible]	21,5			86,0	29,[illegible]		0,8	90,5	29,[illegible]	3,8		
4	86,0	29,[illegible]		3,4		86,0	29,[illegible]	4,5		94,2	29,[illegible]	6,7		
5	86,0	29,[illegible]		3,0		86,8	29,[illegible]	16,5		88,0	29,[illegible]	1,5		
6	87,0	29,[illegible]	3			81,0	29,[illegible]	1,5		88,0	29,[illegible]		11,5	
7	86,0	29,[illegible]	3,6			81,0	29,[illegible]		12,5	86,0	29,[illegible]		8,0	0,5
8	86,0	29,[illegible]		3,0		81,0	29,[illegible]		27	86,1	29,[illegible]		7,3	
9	86,1	29,[illegible]	1,0			81,0	29,[illegible]		19,5	86,0	29,[illegible]	4,3		
10	87,0	29,[illegible]	11,5			86,0	29,[illegible]		2,0	88,2	29,[illegible]		6,0	
11	88,7	29,[illegible]	9,0			86,7	29,[illegible]	8,5		86,2	29,[illegible]	15,0		
12	86,1	29,[illegible]		0,5		81,1	29,[illegible]	4,5		87,0	29,[illegible]		1,2	
13	86,7	29,[illegible]		4,5		81,7	29,[illegible]		3,0	86,7	29,[illegible]		2,5	
14	86,7	29,[illegible]		6,0		86,5	29,[illegible]		20,5	86,0	29,[illegible]	21,5		
15	86,7	29,[illegible]	6,4			81,0	29,[illegible]		12,8	87,0	29,[illegible]		0,5	
16	88,0	29,[illegible]		8,5		86,7	29,[illegible]		14,0	86,0	29,[illegible]	1,0		
17	88,0	29,[illegible]		12		81,3	29,[illegible]		7,7	86,0	29,[illegible]		13,7	
18	87,0	29,[illegible]	5,5		0,5	86,0	29,[illegible]		13,0	86,0	29,[illegible]		9,0	
19	87,0	29,[illegible]		14,5		82,4	29,[illegible]		16,2	84,1	29,[illegible]		10	
20	86,0	29,[illegible]		1,0		86,1	29,[illegible]		9,7	84,1	29,[illegible]		5,3	0,8
21	86,0	29,[illegible]	6,0			86,7	29,[illegible]		5,0	84,0	29,[illegible]		20	1,0
22	86,0	29,[illegible]	5,0		0,5	86,0	29,[illegible]		10,5	86,0	29,[illegible]	6,7		0,6
23	86,7	29,[illegible]		5,0		81,1	29,[illegible]	3,7		86,0	29,[illegible]		3,4	1,5
24	86,0	29,[illegible]		4,0		86,0	29,[illegible]		10	86,7	29,[illegible]	5,5		
25	86,7	29,[illegible]		6,7		88,2	29,[illegible]		6,5	84,5	29,[illegible]	7,2		
26	86,0	29,[illegible]	13,0			87,0	29,[illegible]		0,2	84,4	29,[illegible]		4,0	
27	86,0	29,[illegible]		0,9		86,0	29,[illegible]	4,0		86,7	29,[illegible]		5,9	
28	86,0	29,[illegible]	4			84,5	29,[illegible]	5,7		86,0	29,[illegible]		8,0	
29	86,7	29,[illegible]		4,8		87,0	29,[illegible]	5,0		86,0	29,[illegible]		6,0	
30	86,0	29,[illegible]		7,0		86,0	29,[illegible]	6,5		86,0	29,[illegible]			
31	86,7	29,[illegible]	3,5							86,0	29,[illegible]		10,5	

Daily Mean Heights of the Thermometer, Barometer and Hygrometer, with Fall of Rain, for the Year 1807, continued.

Day.	August.					September.					October.					November.					December.				
	Thermometer.	Barometer.	Hygrometer.		Fall of Rain.	Thermometer.	Barometer.	Hygrometer.		Fall of Rain.	Thermometer.	Barometer.	Hygrometer.		Fall of Rain.	Thermometer.	Barometer.	Hygrometer.		Fall of Rain.	Thermometer.	Barometer.	Hygrometer.		Fall of Rain.
	°	Inches.	Dry.	Damp.	Inc.	°	Inches.	Dry.	Damp.	Inc.	°	Inches.	Dry.	Damp.	Inc.	°	Inches.	Dry.	Damp.		°	Inches.	Dry.	Damp.	Inc.
1	69,1	29,822		8,0		60,5	29,900		7,0		50,5	29,600		6,0	0,1	37,1	29,038				42,1	30,018		2,0	
2	69,4	29,931	0,0			59,1	29,870	7,0			54,1	29,918		10,0		35,4	29,039		19		42,7	30,030	10,0		
3	66,0	29,926	12,0			57,3	29,814	0	0		53,5	29,903	4,0		5,0	40,6	29,003	6,7			43,7	29,993	10		
4	69,5	29,856	13,5			60,1	29,963	0	0		48,5	29,847	10,0			42,0	29,919	3			40,5	29,970	0,7		
5	69,7	29,938	0,0			59,5	29,818		0,0		45,1	29,985		0,7		39,0	29,947		2,5		41,0	29,993		7,0	
6	69,7	29,879	4,1			59,3	29,908		10,0		50,5	29,995				39,1	29,993		10,5		39,0	30,010	4		
7	69,0	29,975		2,0		59,0	29,914		1,5		45,0	29,903		10	0,2	39,1	29,925		6,0		40,4	30,017		2,7	
8	67,6	29,956	0			59,1	29,788		6,0		43,4	29,903	2,0		0,2	39,1	29,903		4,0		40,0	29,992		7	
9	68,4	29,866	0	0		54,5	29,948		7,0		39,5	29,818		0,5		39,1	29,989		4,0		41,2	29,974		12,2	4,5
10	63,0	29,905	0,7			59,0	29,988		3,0		41,2	29,969	12,0			39,1	29,930	10			37,0	29,646		11,0	
11	63,0	29,881	0,0			59,5	29,993	4,5			36,0	29,845		4,0		39,1	29,888	7,5				29,760		9,5	0,5
12	67,8	29,941	8,4			57,2	29,984	1,0			35,5	29,899		9,0		34,1	29,993	11,0							
13	69,3	29,923	0,0			56,0	29,956	0,2			41,5	29,939	0,4			39,0	29,934	5,0							
14	67,4	29,969		4,0		55,3	29,918	0,5			45,0	29,979		4,0	1,0		29,939		1,0		40,5	29,992		4	2,0
15	65,1	29,979		2,0		50,2	29,969	1,0			41,2	29,954	2,0		0,2	36,1					40,0	30,004		15	2,0
16	65,0	29,959		6,0		54,5	29,987		2,0		42,5	29,969		0,7		42,0	29,948		10,5		39,5	30,043		19	
17	63,1	29,920		3,0		54,5	29,908	0,5			44,0	29,955	1,0		1,0	38,5	29,968		4,5		39,2	30,018		3,0	
18	67,8	29,921		3,0		52,1	29,954	0,5			39,0	29,969		4,1		38,5	29,978		3,2		39,7	30,013		8	3,2
19	69,3	29,892		4,0		52,5	29,935		11,0		36,0	29,903		3,0		38,5	29,977		4,0		37,4	30,029	4,5		
20	69,1	29,859		8,0		52,5	29,899	7			35,5	29,794		0,0	1,5	38,4	29,949		11,0		39,0	30,054		22	
21	67,1	29,847		3,0	4,0	50,1	29,739	0			37,0	29,959	11			42,0	29,943		8,0		37,0	30,029		4,0	
22	66,0	29,864		4,0		52,0	29,778		5,5	0,0	43,5	29,909	4,0			42,0	29,992	10			39,0	30,113	12,0		
23	66,0	29,872	3,0			50,0	29,778	17,0			40,5	29,994		0,5		39,0	30,018	8,2			37,5	30,127	2,7		
24	65,4	29,879	0,2			52,5	29,903		4,5	0,2	37,4	29,944		10		37,5	30,007		2,7		37,4	30,139		13,5	
25	62,0	29,902		3,0		52,5	29,918		11		36,0	29,911		4,0		37,4	30,010		10,5		35,4	30,140	11,0		
26	63,5	29,921	1,0			52,5	29,797	7			37,5	29,807		0,0		39,5	29,995		2,0		39,0	30,171		20	
27	66,0	29,854		2,1		52,5	29,815	2			39,1	29,947		1,0		40,5	29,992	10			39,0	30,159	22		
28	65,0	29,851	13,2			52,5	29,772		8		42,6	29,993	13,5			40,5	29,940	5,0			37,5	30,128	6,5		
29	65,0	29,889		8,0		50,5	29,829		6,5		39,5	29,985		2,1		39,0	29,899	12			37,4	30,152		6,0	
30	64,1	29,963	8,3			50,5	29,874		6,5	0,2	38,6	30,010		11			30,003	1,4			37,5	30,139		8,2	
31	64,0	29,946		10,5							38,2	29,943		13,5							37,7	30,149		8,0	

Daily Mean Height of the Thermometer and Barometer, with Fall of Rain, for the Year 1832.

Day.	January.		February.		March.			April.		May.			June.		
	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.
	°	Inches.	°	Inches.	°	Inches.	Ins.	°	Inches.	°	Inches.	Ins.	°	Inches.	Ins.
1	39,4	29,979	40,5	29,678	41,7	29,959		46,5	29,899	46,6	29,749	0,12	46,6	29,733	
2	37,2	29,977	39,2	29,679	39,1	29,925		45,1	29,842	46,4	29,749		47,7	29,710	
3	37,6	29,949	37,6	29,691	40,3	29,982		44,7	29,898	45,5	29,739		49,1	29,724	
4	36,1	29,933	35,6	29,844	40,1	29,865		46,0	29,784	47,0	29,699		51,4	29,709	
5	37,6	29,985	39,6	29,932	42,3	29,897		46,4	29,759	46,1	29,697		50,1	29,740	
6	37,6	29,949	39,3	29,939	42,7	29,895		47,8	29,733	50,0	29,697		50,1	29,738	0,18
7	37,5	29,968	37,3	29,972	42,7	29,845		46,4	29,744	52,3	29,696		49,5	29,738	
8	37,9	29,956	39,6	29,930	43,5	29,854		46,7	29,736	51,3	29,653		47,8	29,749	
9	37,3	29,944	37,3	29,855	42,4	29,950		46,6	29,749	50,4	29,710		47,0	29,715	
10	37,4	29,966	39,6	29,870	41,4	29,959		45,3	29,759	54,4	29,710		46,9	29,734	
11	39,4	29,969	40,2	29,903	42,9	29,927	0,41	47,0	29,779	54,1	29,696		46,7	29,749	0,9
12	39,4	29,954	40,3	29,964	42,2	29,949		44,5	29,849	52,3	29,657		45,1	29,769	
13	39,7	29,960	42,6	29,875	42,7	29,826		44,6	29,808	52,3	29,695		46,3	29,781	
14	39,2	29,945	42,1	29,826	41,9	29,874		46,1	29,908	50,4	29,760		46,1	29,808	1,02
15	39,3	29,929	41,9	29,834	44,0	29,919		46,4	29,928	54,3	29,730		46,1	29,763	
16	38,3	29,946	40,6	29,984	43,9	29,896		46,9	29,799	49,4	29,760		47,3	29,778	
17	38,2	29,934	40,3	29,959	43,1	29,948		44,1	29,847	46,6	29,734		48,2	29,772	0,3
18	39,0	29,936	40,6	29,967	43,1	29,922		44,5	29,793	47,4	29,697		48,8	29,779	
19	37,4	29,979	40,3	29,964	44,5	29,902		47,5	29,699	48,3	29,694		46,9	29,733	
20	38,6	29,941	42,4	29,935	44,0	29,911		46,7	29,696	49,3	29,693		46,7	29,750	0,26
21	39,0	29,967	42,6	29,779	43,6	29,906		46,7	29,719	50,0	29,699		46,1	29,698	
22	37,8	29,954	40,3	29,771	42,3	29,892		46,4	29,719	51,3	29,696		47,8	29,699	
23	38,0	29,967	40,3	29,809	43,2	29,853		46,1	29,779	51,9	29,654		46,4	29,690	
24	39,0	29,914	40,6	29,843	42,9	29,924		47,6	29,800	50,9	29,679		46,9	29,672	
25	39,1	29,901	39,3	29,819	41,3	29,933		47,8	29,838	50,3	29,716		46,1	29,698	
26	39,0	29,905	41,7	29,870	43,3	29,934		46,5	29,850	49,6	29,679		46,2	29,694	
27	39,2	29,918	41,6	29,900	43,4	29,904		47,1	29,779	49,7	29,663		46,2	29,694	
28	39,0	29,893	40,4	29,897	43,9	29,903		46,4	29,760	49,3	29,708	0,19	47,0	29,699	
29	39,2	29,875			45,6	29,799		47,4	29,755	47,5	29,719		47,6	29,677	0,105
30	39,6	29,901			45,6	29,799		46,9	29,743	46,9	29,754		46,6	29,712	
31	41,1	29,899			46,0	29,743		47,9	29,743	47,4	29,733				

Daily Mean Heights of the Barometer and Readings, with Fall of Rain, for the Year 1832, continued.

Day.	July.		August.		September.		October.		November.		December.	
	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.

Daily Mean Heights of the Thermometer and Barometer, with Rain of Rain, for the Year 1814.

Day.	January.		February.		March.		April.		May.		June.		July.		Rain of Rain.
	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	
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28															
29															
30															
31															

Daily Mean Height of the Thermometer and Barometer, with Fall of Rain, for the Year 1814, continued.

Day.	August.			September.			October.			November.			December.		
	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.
	°	Inches.	Ins.	°	Inches.	Ins.	°	Inches.	Ins.	°	Inches.	Ins.	°	Inches.	Ins.
1	84,4	29,872		82,9	29,848		82,9	29,780	0,25	83,1	29,512	0,6	81,8	30,029	
2	84,9	29,836	1,44	82,9	29,872		84,9	29,747	0,25	85,5	29,309		81,8	29,908	
3	85,7	29,836		84,9	29,860	0,9	84,9	29,793	1,54	85,0	29,369		82,4	29,902	
4	85,4	29,862	0,03	84,9	29,866		84,9	29,817		84,9	29,370		82,6	29,903	
5	85,3	29,863		83,3	29,891		86,1	29,825		84,5	29,396		80,9	29,976	
6	85,5	29,864	1,17	83,7	29,908		86,1	29,838		81,4	30,006		82,4	30,018	
7	84,8	29,834		84,1	29,920	0,85	86,8	29,837		84,9	30,015		81,7	30,037	
8	84,7	29,861		81,9	29,906	0,10	87,8	29,819		80,7	30,022		80,9	30,049	0,17
9	85,6	29,869		81,1	29,866	0,37	86,4	29,802		82,3	30,019		81,1	30,043	
10	85,7	29,772		83,3	29,818		85,3	29,807		80,9	30,041		81,4	30,046	
11	85,1	29,744		83,8	29,868		86,1	29,802		79,9	30,098		80,7	30,006	
12	86,8	29,726		85,9	29,819	0,15	84,3	29,800	0,5	78,4	30,094		80,9	30,071	
13	87,5	29,754		85,1	29,891		84,3	29,898		79,7	30,014		79,7	30,092	
14	85,5	29,792		85,2	29,863		85,0	30,000		80,8	30,024		79,1	30,012	0,12
15	85,4	29,790	0,0	85,9	29,901		83,2	30,015		81,2	29,099	0,37	79,4	30,015	1,4
16	85,1	29,859		86,1	29,870		83,7	29,990	0,07	80,8	29,991		79,4	29,079	
17	85,5	29,819	0,1	81,9	29,776		83,9	29,984	2,175	80,2	30,014		78,5	29,040	
18	85,5	29,755	0,5	82,1	29,892	0,85	83,6	30,001		80,4	30,002		78,5	29,049	
19	84,4	29,732		82,7	29,908	0,55	83,9	29,900		80,6	30,019		77,8	30,000	
20	85,0	29,734	0,37	83,3	29,865	0,45	83,7	29,895	0,75	80,5	29,994		78,6	30,029	
21	85,4	29,740		83,5	29,840	0,4	81,2	29,941		80,9	29,955		78,0	30,018	
22	86,1	29,730		82,7	29,862	1,1	83,3	29,926		78,7	29,923		76,5	30,025	
23	87,8	29,770		83,3	29,860	0,5	83,3	29,923	0,05	80,9	29,959	0,8	72,8	30,017	
24	87,2	29,769		83,9	29,838	0,42	85,6	29,939		81,2	29,947	0,25	70,1	29,006	0,42
25	86,6	29,806		83,5	29,773	1,18	82,0	29,934		79,5	29,929	0,85	75,6	29,054	1,0
26	86,9	29,796		82,2	29,702	0,07	82,4	29,961		79,7	29,912	1,4	77,2	29,037	0,42
27	89,2	29,786		81,1	29,707	0,37	81,1	29,851		80,8	29,964	0,5	78,8	30,014	0,15
28	87,8	29,814	0,18	80,9	29,784	1,47	80,2	29,788		79,9	30,000	2,0	79,3	30,067	
29	85,2	29,823		84,8	29,847		84,7	29,796	0,05	80,7	30,006	0,15	79,1	30,101	0,07
30	87,3	29,837		85,2	29,843		85,5	29,887		81,4	30,012		77,7	30,074	
31	86,1	29,830					84,3	29,904	0,05				79,7	30,084	

Daily Mean Height of the Thermometer and Barometer, with Fall of Rain, for the Year 1815.

Day.	January.			February.		March.		April.		May.		June.		July.		
	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Fall of Rain.
	°	Inches.	Inc.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	Inc.
1	32,9	30,128		29,9	29,937	36,3	29,911	40,0	29,960	46,0	29,918	56,1	29,858	63,7	29,799	1,05
2	33,1	30,122		30,1	29,979	41,9	29,952	37,6	29,949	46,0	29,903	54,6	29,819	63,3	29,774	
3	35,5	30,075		29,974	29,974	42,2	29,966	39,9	29,916	46,4	29,914	57,1	29,839	64,9	29,808	
4	37,1	30,132		29,8	30,016	43,1	30,039	43,0	29,924	45,7	29,852	57,7	29,852	67,0	29,807	
5	35,5	30,040		29,6	30,040	41,1	29,836	44,1	29,937	48,3	29,807	57,1	29,797	66,0	29,872	
6	35,1	30,073		30,0	30,019	42,4	29,916	40,9	29,953	46,7	29,809	57,8	29,760	66,1	29,939	
7	34,2	30,102		30,3	29,998	43,0	29,749	44,4	29,975	46,3	29,919	60,9	29,802	65,1	29,951	
8	34,6	30,139		30,7	29,939	40,5	29,744	40,1	29,962	46,9	29,894	59,7	29,813	65,9	29,980	
9	34,9	30,128		30,0	29,937	43,2	29,759	43,7	29,948	48,3	29,854	59,6	29,798	65,9	29,967	
10	34,1	30,099		30,3	29,930	43,6	29,742	46,4	29,925	50,3	29,849	59,1	29,831	65,9	29,797	
11	33,9	30,175		31,0	29,939	44,9	29,779	49,1	29,870	50,7	29,883	59,3	29,855	65,7	29,768	
12	32,7	30,174		31,8	29,921	46,2	29,791	50,1	29,902	51,8	29,923	61,9	29,912	65,4	29,791	
13	33,2	30,114		30,4	29,879	46,9	29,810	49,3	29,878	51,2	29,953	60,2	29,842	64,6	29,772	
14	33,6	30,073		31,7	29,941	46,0	29,857	48,3	29,906	50,8	29,903	60,8	29,859	65,1	29,799	
15	33,6	30,077		31,2	29,956	46,1	29,908	48,9	29,960	50,1	29,872	60,4	29,845	64,4	29,756	0,075
16	33,6	30,109		31,6	29,889	45,0	29,836	47,0	29,960	49,6	29,802	59,5	29,842	63,7	29,803	0,4
17	33,2	30,128		31,9	29,935	46,1	29,909	48,4	29,908	49,7	29,869	60,7	29,858	64,0	29,798	0,3
18	33,0	30,131		30,6	29,936	45,9	29,799	46,2	29,948	51,8	29,843	61,4	29,864	64,0	29,838	0,3
19	32,4	30,109		31,1	29,879	44,7	29,649	46,2	29,943	50,1	29,818	60,1	29,874	64,0	29,849	
20	32,6	30,140		30,5	29,882	45,2	29,678	45,8	29,893	49,7	29,809	61,7	29,895	62,7	29,921	
21	32,6	30,137	0,1	30,4	29,873	45,5	29,621	45,5	29,881	48,0	29,820	60,0	29,902	63,9	29,790	
22	32,4	30,080	0,12	30,6	29,949	46,0	29,624	47,2	29,914	51,1	29,849	59,7	29,928	64,1	29,838	
23	33,5	30,096	0,12	30,3	29,921	46,9	29,693	47,3	29,931	50,6	29,898	61,1	29,950	62,7	29,922	
24	33,8	30,042		30,0	29,988	46,0	29,613	47,0	29,919	49,1	29,903	60,9	29,907	63,0	29,942	
25	33,2	30,008		29,8	29,954	46,9	29,654	46,1	29,932	48,1	29,843	60,9	29,865	62,9	29,876	
26	33,2	30,009		29,5	29,944	44,4	29,624	46,7	29,906	47,6	29,873	61,7	29,858	63,9	29,842	
27	33,2	30,017		29,5	29,985	44,0	29,802	47,6	29,961	49,7	29,927	60,1	29,891	64,1	29,924	
28	33,5	29,950		29,6	29,976	42,4	29,950	46,5	29,959	47,6	29,911	59,7	29,911	63,9	29,934	
29	33,6	29,990				43,0	29,958	45,9	29,971	50,9	29,772	58,1	29,955	64,1	29,957	
30	33,6	30,049				43,4	29,914	45,6	29,958	49,4	29,779	58,4	29,949	64,0	29,950	
31	33,6	30,071				44,9	30,017			49,3	29,796			64,5	29,869	

Daily Mean Result of the Thermometer and Barometer, with Fall of Rain, for the Year 1815, continued.

Day.	August.		September.			October.			November.			December.		
	Thermometer.	Barometer.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.
	°	Inches.	°	Inches.	Inc.	°	Inches.	Inc.	°	Inches.	Inc.	°	Inches.	Inc.
1	67.8	29,693	67.8	29,693	0,39	60.8	29,974		51.2	29,947		78.6	29,902	
2	67.3	29,679	68.2	29,697		64.9	30,023		51.4	29,922		80.5	29,974	
3	67.3	29,654	68.1	29,683		64.0	30,007		50.2	29,918		72.0	29,963	
4	68.5	29,629	67.8	29,653		65.8	29,996		50.1	29,924		69.9	30,009	
5	69.1	29,602	68.0	29,645		64.5	29,949		49.9	29,933		69.8	30,013	
6	68.8	29,627	67.9	29,627		65.1	29,921		50.1	29,903		77.9	29,892	
7	68.3	29,643	66.1	29,649		65.0	29,945		49.3	29,911		77.0	29,914	
8	68.3	29,668	67.1	29,644		62.5	29,953		48.4	29,999		76.7	30,043	
9	68.3	29,693	68.0	29,642	0,47	62.7	29,957	0,125	49.3	30,015	0,025	78.0	30,033	
10	68.3	29,693	66.7	29,629	0,125	63.9	29,992		47.6	30,013	0,025	79.1	30,028	
11	68.3	29,693	66.1	29,646	0,225	62.9	29,969		44.8	30,042	0,600	77.7	30,045	
12	68.3	29,693	64.9	29,657		61.7	29,963		47.3	30,041	0,525	77.8	30,109	
13	68.3	29,693	65.3	29,648		61.4	29,997		48.7	30,074	0,45	76.8	30,103	
14	68.3	29,693	65.3	29,647		61.7	30,004		46.4	30,068	0,325	77.3	30,077	
15	68.3	29,693	64.9	29,668		60.0	30,007	0,125	46.1	30,079	0,300	77.1	30,100	
16	68.3	29,693	64.9	29,686		61.1	30,003		47.0	30,060	0,025	77.4	30,118	
17	68.3	29,693	64.5	29,685	0,375	62.0	29,992		46.7	30,035		78.3	30,143	
18	68.3	29,693	65.3	29,708		62.0	29,969		46.1	30,015		78.6	30,132	
19	68.3	29,693	64.9	29,697		61.9	29,979	0,025	45.7	30,029		79.5	30,120	
20	68.3	29,693	65.0	29,677		60.7	29,961		46.1	30,018		77.3	30,094	
21	68.3	29,693	65.0	29,663		73.3	29,960	2,48	46.0	30,033		78.3	30,076	
22	68.3	29,693	64.9	29,643		70.9	29,994	0,25	48.8	29,999	0,625	77.2	30,059	
23	68.3	29,693	65.1	29,627		69.8	29,974	0,100	53.0	29,976	1,500	76.8	30,079	
24	68.3	29,693	65.0	29,639		61.5	29,905		54.9	29,956	0,25	76.8	30,085	
25	68.3	29,693	64.3	29,643		61.4	29,941	0,300	56.1	29,915	4,6	77.8	30,065	
26	68.3	29,693	65.0	29,649	0,65	57.3	29,919	0,100	54.9	29,880	0,05	77.3	30,075	
27	68.3	29,693	65.1	29,648	0,300	56.4	29,974	1,000	51.9	29,922		78.4	30,061	0,375
28	68.7	29,693	65.0	29,644	0,475	56.6	29,969	0,125	50.9	29,749	0,625	79.3	30,091	0,775
29	68.4	29,691	64.8	29,668		56.9	29,940	0,200	53.0	29,849		78.7	30,054	2,075
30	68.4	29,682	64.9	29,653		57.0	29,987	1,075	57.8	29,918		78.8	30,107	1,15
31	68.6	29,659	64.9	29,633		54.3	29,950					77.3	30,117	0,125

Hour Most Future of the Temperature and Barometer, with Fall of Rain, for the Year 1816.

	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.	
	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.
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Daily Mean Height of the Thermometer and Barometer, with Fall of Rain, for the Year 1841, continued.

Daily Mean Height of the Thermometer and Barometer, with Fall of Rain, for the Year 1817.

Day.	January.			February.		March.		April.		May.			June.			July.		
	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.
	°	Inches.	Ins.	°	Inches.	°	Inches.	°	Inches.	°	Inches.	Ins.	°	Inches.	Ins.	°	Inches.	Ins.
1	38,8	30,129		37,6	29,672	41,9	29,920	48,1	30,089	50,2	29,756		57,4	29,841		60,6	29,914	
2	39,5	30,155		37,8	29,593	42,9	29,939	48,7	30,024	50,0	29,974		56,9	29,878		60,9	29,953	
3	39,7	30,144		37,8	29,535	41,5	29,987	48,0	29,947	52,0	29,993		56,3	29,862		60,9	29,941	
4	39,4	30,126		37,7	29,540	42,8	30,006	48,3	30,009	54,1	30,054		55,4	29,899	0,05	57,6	29,902	
5	37,8	30,130		37,5	29,554	41,4	30,005	48,3	30,107	50,9	30,031		56,1	29,876		57,5	29,899	
6	37,5	30,149		37,3	29,585	41,5	30,020	48,6	30,043	51,9	30,015		56,2	29,863		58,2	29,930	1,15
7	37,8	30,145		37,6	29,614	42,6	30,121	48,5	30,012	52,4	29,991		56,0	29,859		58,5	29,897	
8	37,4	30,140		37,8	29,761	42,2	30,155	48,2	29,990	53,2	29,965		56,9	29,876	0,005	58,4	29,841	
9	37,3	30,144		38,2	29,797	42,1	30,098	48,0	30,014	51,4	29,985		56,9	29,934		60,1	29,843	0,1
10	38,0	30,129		38,5	29,777	39,8	30,089	48,7	30,039	54,2	29,993		56,7	29,933		60,3	29,933	
11	38,1	30,151		39,2	29,733	40,4	30,032	48,4	30,025	50,9	29,969		56,7	29,934		60,8	29,973	
12	38,5	30,171		39,7	29,731	41,4	30,079	48,1	30,063	54,2	29,998		57,3	29,917		57,2	29,942	
13	38,8	30,180		39,4	29,760	41,9	30,051	47,5	30,036	54,0	29,988		58,7	29,980	0,05	59,1	29,877	
14	37,8	30,171		39,2	29,820	41,9	30,129	48,5	30,032	50,3	29,938		59,0	29,943		59,3	29,901	0,2
15	38,0	30,168		40,6	29,872	42,7	30,127	48,9	30,005	50,1	29,980		59,9	29,930		59,2	29,749	
16	37,9	30,168		39,4	29,893	42,6	30,111	47,8	29,975	50,9	29,969		59,6	29,925		57,6	29,908	
17	37,8	30,171		39,4	30,118	42,8	30,070	48,1	29,968	50,7	29,921		58,3	29,934		59,0	29,877	
18	37,3	30,184		39,4	30,014	42,8	30,077	48,7	30,001	50,3	29,969		58,7	29,914		59,0	29,900	
19	37,8	30,206		39,5	30,022	41,8	30,039	48,7	30,014	50,0	29,976		58,7	29,930		59,0	29,906	
20	37,8	30,208		41,2	30,033	42,3	30,031	48,2	30,039	50,9	29,975		58,7	29,905		58,4	29,902	
21	38,3	30,201		40,0	30,010	40,4	30,002	48,1	29,998	52,2	29,951		58,3	29,900		57,7	29,919	
22	38,9	30,174		39,5	29,999	44,2	30,009	48,5	29,998	52,3	29,958		55,2	29,971		59,9	29,928	
23	37,3	30,162		39,0	30,004	40,3	30,032	48,1	29,982	50,1	29,913		56,2	29,943	0,05	59,2	29,947	
24	39,1	30,162		39,4	30,002	40,0	30,042	48,4	29,978	49,8	29,970		56,7	29,947		59,1	29,971	
25	39,0	30,155		39,7	30,049	42,7	30,061	48,1	29,993	49,3	29,997		57,6	29,914		59,3	29,967	
26	39,3	30,170		39,2	30,035	42,4	30,057	47,9	29,987	47,8	29,993		58,9	29,921		59,3	29,923	
27	39,3	30,168		39,0	30,079	41,2	30,011	47,3	29,969	50,7	29,999		59,7	29,903		59,6	29,939	,15
28	39,0	30,158		38,9	30,057	40,5	29,990	46,2	29,992	49,8	29,958	0,05	59,3	29,918		60,9	29,918	
29	39,4	30,177				41,7	29,971	45,8	29,985	51,3	29,985	0,05	59,0	29,951		57,1	29,946	
30	37,7	30,201				40,0	29,959	46,4	29,984	54,3	29,949	0,05	59,6	29,899		57,9	29,997	
31	37,9	30,196				39,8	29,949			54,7	29,949	0,05				57,8	29,953	

Daily Mean Height of the Thermometer and Barometer, with Fall of Rain, for the Year 1817, continued.

Day.	August.			September.			October.			November.			December.		
	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.
	°	Inches.	Ins.	°	Inches.	Ins.	°	Inches.	Ins.	°	Inches.	Ins.	°	Inches.	Ins.

Daily Meteorological Register of the Thermometer and Barometer, with Fall of Rain, for the Year 1818.

Day.	January.		February.		March.		April.			May.		June.			July.		
	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.
	°	Inches.	°	Inches.	°	Inches.	°	Inches.	Inc.	°	Inches.	°	Inches.	Inc.	°	Inches.	Inc.
1	29,8	29,145	31,0	29,000	38,9	29,000	42,7	30,092		52,4	29,966	59,9	29,902		61,1	29,955	0,24
2	31,2	29,301	32,7	29,127	39,0	29,000	42,2	30,099		51,9	29,996	59,8	29,925		61,0	29,969	0,09
3	31,9	29,191	31,2	29,102	39,3	29,018	43,5	30,097		52,3	29,996	59,0	29,924		60,5	29,997	
4	30,7	29,099	30,5	29,169	44,5	29,049	40,1	30,079		54,9	29,795	60,5	29,967		60,2	29,956	
5	30,8	29,194	30,9	29,272	40,9	29,071	42,6	30,060		54,0	29,951	59,4	29,958		60,0	29,998	
6	29,7	29,149	30,0	29,144	40,9	29,011	44,3	30,045		50,5	29,960	58,2	29,926		60,5	29,994	
7	29,5	29,101	30,1	29,124	43,4	29,033	44,3	30,035		51,2	29,950	60,4	29,975		62,8	29,962	
8	29,5	29,159	29,8	29,281	40,9	29,078	44,0	30,060		50,9	29,902	60,0	29,971		62,3	29,914	0,8
9	29,5	29,191	29,5	29,195	42,8	29,102	43,1	30,079		51,9	29,896	59,2	29,934		63,1	29,949	0,23
10	29,1	29,157	29,9	29,144	43,4	29,069	46,5	30,103		52,0	29,915	57,5	29,918		64,4	29,907	0,15
11	28,7	29,170	29,9	29,218	46,7	29,091	44,4	30,095		57,0	29,909	57,6	29,909		64,2	29,964	
12	29,3	29,178	29,4	29,349	45,7	29,104	44,5	30,091		57,4	29,926	59,4	29,914		64,4	29,969	
13	29,0	29,167	29,4	29,291	49,0	29,098	45,6	30,093	0,6	58,9	29,949	60,2	29,897		66,3	29,999	
14	29,0	29,151	27,9	29,219	46,3	29,054	48,3	30,075		60,0	29,966	57,3	29,966		64,3	29,991	
15	29,0	29,126	27,9	29,220	45,9	29,039	46,3	30,043		60,1	29,957	59,3	29,941		64,3	29,997	
16	29,7	29,111	28,0	29,240	45,6	29,033	49,0	30,074		60,3	29,957	57,9	29,873		64,6	29,978	
17	29,7	29,079	27,9	29,196	46,0	29,009	50,4	30,041		59,0	29,933	59,4	29,910		64,3	29,934	
18	29,8	29,091	28,0	29,063	46,0	29,046	48,3	30,016		60,1	29,956	60,0	29,904		64,3	29,950	0,5
19	29,9	29,057	28,1	29,029	45,3	29,054	46,1	29,997		60,5	29,949	59,1	29,901		62,9	29,962	0,3
20	29,9	29,029	28,3	29,034	45,3	29,057	46,5	29,974		59,3	29,979	57,7	29,895		62,2	29,943	
21	29,5	29,003	28,5	29,039	45,1	29,039	45,7	29,962		59,2	29,949	57,4	29,881	0,1	64,1	29,963	
22	29,6	28,987	28,9	29,039	45,4	29,037	46,5	29,972		58,5	29,956	59,0	29,906		62,9	29,939	
23	29,4	28,988	28,4	29,097	45,0	29,119	46,7	29,999		59,5	29,979	59,2	29,906	0,1	63,7	29,973	
24	29,6	29,166	28,9	29,079	45,7	29,121	44,6	29,995		59,3	29,992	59,3	29,904		63,3	29,967	0,2
25	29,4	29,198	28,6	29,049	45,6	29,095	45,5	30,007		59,0	29,957	59,7	29,902	0,1	63,9	29,798	
26	29,4	29,198	28,7	29,003	46,1	29,091	46,9	30,018		59,2	29,939	60,0	29,877		64,8	29,903	
27	29,5	29,198	28,3	29,011	46,1	29,091	45,5	29,998		60,4	29,934	57,6	29,901	0,07	64,3	29,930	
28	29,8	29,272	28,5	29,046	46,9	29,043	46,2	29,995		59,3	29,903	57,6	29,921		62,9	29,972	
29	29,4	29,145			47,3	29,034	46,9	29,979		59,7	29,929	58,1	29,929	0,13	66,3	29,799	
30	29,3	29,117			48,0	29,010	48,1	29,998		59,7	29,931	57,4	29,972	0,21	66,9	29,922	
31	28,4	29,092			47,6	29,017				59,7	29,943				67,2		

Daily Mean Heights of the Thermometer and Barometer, with Falls of Rain, for the Year 1818, continued.

Day.	August.			September.			October.			November.			December.		
	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.
	°	Inches.	Inc.	°	Inches.	Inc.	°	Inches.	Inc.	°	Inches.	Inc.	°	Inches.	Inc.
1	68,9	29,816	0,01	65,8	29,899		55,5	29,955		49,8	30,016		51,3	29,829	4,15
2	68,6	29,859		67,1	29,791		55,6	29,912		52,7	29,978	0,275	50,3	29,847	0,12
3	68,5	29,892		65,7	29,884	0,45	54,5	29,886	0,25	52,0	30,039		53,8	29,924	2,9
4	68,9	29,923		63,3	29,892	1,45	55,9	29,869		50,3	30,028		49,9	30,020	0,05
5	68,6	29,905		63,7	29,957	0,05	52,3	29,907	0,09	51,3	30,001		47,8	30,049	
6	69,7	29,854	0,25	65,5	29,921		51,9	29,909	0,45	51,5	30,043		47,7	30,020	
7	69,4	29,859		61,8	29,933		52,5	29,961	0,05	51,6	30,039		49,0	30,009	
8	69,4	29,710		62,9	29,996		54,6	29,921		54,5	30,039		50,0	29,965	
9	64,9	29,795	0,075	64,8	29,840		52,4	29,891	0,075	52,3	30,049	0,225	48,3	29,979	0,075
10	66,6	29,816		64,9	29,871		50,1	29,983	0,075	52,3	30,041	0,15	49,7	29,969	
11	67,3	29,906		64,9	29,874		50,4	29,979	0,125	51,9	30,049		48,1	30,009	
12	66,5	29,844		62,8	29,962		54,1	29,947		50,8	30,039	0,07	50,8	30,075	
13	66,7	29,832		61,8	29,847		50,5	29,908		50,5	30,006	0,3	50,2	30,009	
14	66,3	29,832	0,30	61,4	29,945		54,9	29,947	0,45	50,3	30,003	0,3	50,0	30,017	
15	66,9	29,871		61,0	29,853		54,6	29,974		54,1	30,038	0,07	50,3	30,002	
16	65,5	29,849		61,4	29,892		54,2	29,974		52,8	30,012	0,07	49,1	30,109	
17	65,0	29,867		63,7	29,933		53,9	29,991		52,8	29,985	0,25	49,7	30,116	
18	65,4	29,856		63,5	29,898		54,4	29,954		54,0	30,013	0,05	47,3	30,103	
19	67,1	29,838	0,05	60,0	29,914		52,2	29,979		52,4	30,045	0,275	48,7	30,045	
20	64,8	29,798	0,75	60,5	29,911	0,05	50,8	29,947	0,75	52,0	30,089	0,09	50,1	30,066	
21	64,6	29,719	0,56	62,4	29,980		53,5	29,991	1,35	52,3	30,107	0,02	50,7	30,018	
22	64,7	29,759	0,75	63,1	29,914	0,75	52,9	29,995	0,72	52,8	30,078	0,15	47,8	30,057	
23	62,1	29,804	1,09	60,5	29,915		50,1	29,891	1,4	52,2	30,050	1,3	47,2	30,128	
24	63,4	29,808	1,4	61,4	29,980	0,27	53,6	29,884	0,55	50,8	30,005	1,8	47,3	30,103	
25	64,1	29,844		61,8	29,980	0,075	54,5	29,903	0,17	52,5	30,041	1,55	48,1	30,101	
26	62,9	29,824	0,4	62,7	29,878	0,425	50,9	29,956		49,8	30,003		49,2	30,103	
27	62,5	29,875	0,15	63,1	29,920		50,4	30,019	0,075	49,8	30,009		47,5	30,141	
28	62,7	29,875	0,3	63,0	29,957		50,4	29,977	1,55	47,8	30,014		45,3	30,123	
29	63,7	29,892		63,5	29,915		49,6	29,965	0,32	48,7	29,991		47,9	30,091	0,05
30	63,6	29,879		63,9	29,941		48,4	29,998		48,9	29,959		49,2	30,078	0,6
31	63,7	29,862					49,3	29,965	0,45				47,7	30,114	0,25

Daily Mean Height of the Thermometer, Barometer and Hygrometer, with Fall of Rain, for the Year 1819.

Day.	January.		February.		March.		April.			May.		June.			July.		
	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Thermometer.	Barometer.	Fall of Rain.	Thermometer.	Barometer.	Fall of Rain.
	°	Inches.	°	Inches.	°	Inches.	°	Inches.	Ins.	°	Inches.	°	Inches.	Ins.	°	Inches.	Ins.
1	37,8	29,099	74,7	30,121	69,7	30,082	69,9	29,950		65,4	29,935	69,9	29,954		61,5	29,907	
2	39,8	29,094	75,4	30,124	69,3	30,090	61,3	29,999		62,6	29,948	68,9	29,948		67,2	29,922	
3	39,4	29,030	75,6	30,149	69,3	29,982	61,9	29,980		62,6	29,932	67,6	29,927		69,5	29,938	0,12
4	39,7	29,020	76,1	30,139	69,8	29,962	64,1	29,981		62,3	29,957	68,3	29,943		69,3	29,933	0,07
5	39,8	29,019	76,3	30,147	69,3	29,971	65,5	29,965		67,1	29,982	68,3	29,900		69,8	29,799	0,1
6	39,5	29,010	77,1	30,128	69,5	29,941	65,5	29,960		67,6	29,999	69,6	29,859		69,8	29,749	0,5
7	39,3	29,004	76,3	30,094	69,5	29,952	65,6	29,993		67,7	29,968	69,6	29,821		69,5	29,797	0,5
8	39,3	29,014	75,7	30,087	69,2	29,948	65,6	30,002		67,1	29,954	69,5	29,792		68,4	29,843	0,12
9	38,8	29,018	77,6	30,109	67,1	29,957	66,1	29,963		65,3	29,888	68,1	29,871		68,1	29,898	0,05
10	39,6	29,011	77,8	30,109	67,9	29,964	66,0	29,987		65,7	29,892	68,3	29,866		67,7	29,954	0,3
11	39,2	29,024	77,3	30,139	67,7	29,959	66,3	29,980		65,2	29,891	68,0	29,906	0,225	67,8	29,902	
12	39,9	29,015	77,7	30,136	67,6	29,974	66,1	29,984		65,0	29,899	67,6	29,946		68,3	29,911	0,75
13	39,5	29,014	77,9	30,141	67,5	29,965	65,9	29,989		66,8	29,911	68,7	29,979		67,8	29,902	0,65
14	39,5	29,024	78,0	30,139	68,2	29,969	65,7	29,979		64,2	29,911	69,1	29,936		67,8	29,945	
15	39,3	29,049	78,5	30,114	68,5	29,953	66,5	29,959		67,6	29,909	68,7	29,917		67,6	29,949	0,32
16	38,9	29,050	78,5	30,088	68,9	29,954	66,9	29,970		68,2	29,901	69,7	29,879		67,9	29,962	
17	39,4	29,030	79,0	30,062	68,9	29,941	67,1	29,961		69,0	29,894	69,9	29,896		68,3	29,939	
18	39,4	29,024	79,6	30,049	68,6	29,936	67,3	29,960	0,15	69,3	29,897	67,6	29,903		68,6	29,893	
19	39,3	29,021	79,3	30,045	68,2	29,932	68,6	29,960	0,9	69,2	29,929	69,3	29,951		68,5	29,905	
20	39,2	29,027	79,0	30,062	67,7	29,935	67,1	29,948	3,15	69,1	29,948	69,4	29,903		68,2	29,832	
21	39,5	29,029	77,2	30,091	67,9	29,979	67,3	29,933	0,15	67,8	29,973	68,7	29,878		67,3	29,827	
22	37,6	29,006	79,1	30,097	67,6	29,991	68,1	29,975		67,3	29,971	68,7	29,878		68,0	29,837	
23	37,8	29,052	77,5	30,112	67,3	30,007	67,5	29,988		67,3	29,973	68,9	29,916		67,7	29,861	
24	37,6	29,071	77,0	30,084	68,3	30,035	67,1	29,966		67,3	29,968	68,8	29,909		68,3	29,909	
25	37,7	29,057	78,5	30,057	68,2	30,027	67,3	29,962		66,8	29,945	69,3	29,893		68,4	29,954	
26	38,1	29,033	81,3	29,997	68,7	29,988	66,4	29,981		68,3	29,719	71,8	29,891		68,6	29,937	
27	37,4	29,003	80,2	30,011	68,5	29,985	66,0	29,915		68,1	29,769	69,3	29,879		67,6	29,957	
28	37,9	28,988	80,9	30,135	68,9	29,969	66,3	29,889		69,1	29,779	68,1	29,793		67,2	29,944	
29	37,7	28,980			68,6	29,940	66,4	29,902		69,1	29,779	68,6	29,809		67,6	29,903	
30	37,3	28,994			67,5	29,941	67,9	29,924		69,2	29,718	69,2	29,859		68,3	29,877	
31	34,7	28,997			68,6	29,962				69,3	29,658				69,4	29,843	

Daily Mean Height of the Thermometer, Barometer and Hygrometer, with Fall of Rain, for the Year 1819, continued.

Day.	August.				September.				October.				November.				December.			
	Thermometer.	Barometer.	Hygrometer.	Fall of Rain.	Thermometer.	Barometer.	Hygrometer.	Fall of Rain.	Thermometer.	Barometer.	Hygrometer.	Fall of Rain.	Thermometer.	Barometer.	Hygrometer.	Fall of Rain.	Thermometer.	Barometer.	Hygrometer.	Fall of Rain.
	°	Inches.	Dry. Inc.	Inc.	°	Inches.	Dry. Inc.	Inc.	°	Inches.	Dry. Inc.	Inc.	°	Inches.	Dry. Damp.	Inc.	°	Inches.	Dry. Damp.	Inc.
1	80,4	29,409	3,5	0,35	80,7	29,010	11,5	0,8	80,8	29,179	8,5		80,3	30,070	8,3	1,4	80,3	30,083	6,5	
2	80,1	29,472	3,6		80,3	29,058	12,2		80,6	29,205	8,6		82,2	30,029	7,2	0,15	82,8	30,070	7,8	
3	80,3	29,515	3,6	0,10	80,3	29,028	12,3	0,25	80,7	29,201	8,8		82,3	30,118	7,8	0,05	82,8	30,132	8,8	
4	80,7	29,524	4,5		80,4	29,063	12,2		80,4	29,201	8,8		82,2	30,101	8,2		79,4	30,126	8,2	
5	80,6	29,469	6,6		80,6	29,005	12,3		80,5	29,202	7,8		82,4	30,011	8,8	0,75	79,8	30,113	8,4	
6	80,8	29,403	6,6		80,5	29,018	12,5		80,5	29,202	7,8		82,8	29,949	8,8	0,4	79,2	30,087	9,2	
7	80,8	29,388	6,6	0,02	80,6	29,035	12,3		80,7	29,200	7,8		82,4	29,901	12,7	0,6	79,3	30,126	9,3	
8	80,6	29,310	6,5	0,02	80,6	29,045	12,3	0,35	80,5	29,205	8,5		82,8	29,799	13,0	1,75	80,0	30,090	9,0	
9	80,5	29,369	5,5		80,6	29,063	12,3		80,3	29,240	8,3	0,2	82,6	29,731	17,8	0,25	80,2	30,149	8,7	0,2
10	80,5	29,400	6,6		80,0	29,072	12,3		80,4	29,255	8,4		77,2	29,760	10,0	0,05	79,6	30,219	9,6	
11	80,5	29,433	7,6		80,3	29,079	12,3	1,75	80,1	29,279	8,8		79,2	29,953	14,0		77,8	30,304	8,3	
12	80,6	29,502	7,6		80,2	29,114	12,3	0,05	80,6	29,303	7,6		80,2	29,981	10,7		77,4	30,139	8,3	
13	80,6	29,519	8,6		80,2	29,105	12,7		80,1	29,312	8,1		80,6	30,001	8,0	0,1	77,4	30,148	8,3	
14	80,7	29,505	7,6		80,3	29,094	12,5		80,5	29,339	10,0		81,3	30,010	7,8		77,7	30,158	8,4	
15	80,5	29,465	7,6		80,6	29,079	12,7	0,05	80,3	29,371	10,0	0,2	81,0	30,003	8,7		77,1	30,138	9,1	
16	80,4	29,417	8,5		80,4	29,094	12,5		79,9	29,472	11,5		80,2	29,977	7,4		78,8	30,096	11,3	
17	80,8	29,373	8,5		80,6	29,102	12,3		80,2	29,503	14,0		80,9	29,993	8,8		78,1	30,129	11,3	
18	80,9	29,338	8,6	0,02	80,8	29,087	12,6		80,3	29,599	13,7		80,4	30,041	8,6	0,25	78,8	30,182	12,3	
19	80,4	29,309	8,6		80,8	29,114	12,6		80,8	29,675	13,4		80,1	30,075	8,6		78,8	30,196	12,6	
20	80,5	29,304	9,6	0,2	80,5	29,096	12,3		80,5	29,810	7,5	0,2	81,6	30,009	8,8		78,7	30,176	8,5	
21	81,1	29,356	11,6		80,4	29,078	12,3		80,8	30,178	7,6		79,2	29,971	8,8		79,0	30,112	11,5	
22	80,9	29,403	10,7		80,4	29,059	12,3	0,7	80,8	30,223	8,3		81,3	30,079	8,8		79,3	30,178	9,6	
23	81,0	29,441	12,7		80,6	29,039	12,6		80,8	30,240	8,3		82,3	30,134	4,8		79,6	30,099	10,3	
24	80,8	29,395	13,0		80,6	29,047	12,3		80,8	30,203	8,3		82,3	30,139	13		79,9	30,056	10,7	
25	80,5	29,351	13,3		80,6	29,068	12,3		80,8	30,023	7,8		82,0	30,183	9,8		79,8	30,103	10,3	
26	80,6	29,318	14,7		80,7	29,041	12,8		80,8	30,039	8,3		82,7	30,079	1,6		80,1	30,132	11,6	
27	80,6	29,305	15,6		80,4	29,018	12,3		80,5	30,043	8,0		81,6	30,029	4,7		80,2	30,196	10,8	
28	80,6	29,302	17,0		80,3	29,009	12,3		80,4	29,999	12,1		81,2	30,139	2,5		80,2	30,087	12,6	
29	80,2	29,344	14,7		81,6	29,001	12,8		80,3	29,993	11,8		81,6	30,217	2,5		79,8	30,039	11,5	
30	80,3	29,324	17,4		81,8	29,004	12,3	1,6	79,9	29,994	8,8	0,75	81,0	30,160	4,3		79,4	30,021	11,7	
31	80,9	29,304	18,3						79,8	29,995	8,8	0,75					79,6	29,998	11,7	

Daily Mean History of the Thermometer, Barometer and Hygrometer, with Fall of Rain, for the Year 1820.

Day.	January.			February.			March.				April.				May.				June.			
	Thermometer.	Barometer.	Hygrometer.	Thermometer.	Barometer.	Hygrometer.	Thermometer.	Barometer.	Hygrometer.	Fall of Rain.	Thermometer.	Barometer.	Hygrometer.	Fall of Rain.	Thermometer.	Barometer.	Hygrometer.	Fall of Rain.	Thermometer.	Barometer.	Hygrometer.	Fall of Rain.
	°	Inches.	Dry.	°	Inches.	Dry.	°	Inches.	Dry.	Damp.	Inches.	Dry.	Damp.	Inches.	Dry.	Damp.	Inches.	°	Inches.	Dry.	Inches.
1	39,6	30,015	11,9	39,6	30,134	15,5	41,7	30,096	18,8		48,5	29,985	4,8		57,1	29,918	11,4		69,0	29,849	12,8	
2	39,9	30,098	5,8	39,5	30,133	16,3	40,5	30,060	18,8		51,8	29,944	8,0		57,5	29,840	12,0		69,7	29,859	21,9	
3	39,8	30,209	4,1	39,7	30,139	14,2	40,5	30,066	16,1		54,0	29,836	5,1	0,5	57,2	29,789	12,0		69,1	29,886	22,9	
4	39,9	30,295	7,0	39,7	30,111	14,5	40,5	30,102	17,5		54,8	29,694	5,1		56,7	29,692	10,3		69,2	29,867	21,8	
5	37,3	30,291	12,0	39,7	30,088	13,7	40,3	30,070	20,0		54,0	29,611	7,5		56,1	29,641	10,1		69,0	29,844	20,8	
6	36,8	30,099	11,7	39,5	30,077	12,9	40,2	30,067	17,5		54,6	29,624	6,6		59,0	29,702	17,2		69,0	29,842	21,3	
7	39,9	30,143	13,6	39,9	30,046	13,2	40,3	30,043	19,1		54,5	29,529	10,0		58,3	29,773	20,8	0,05	69,7	29,802	20,8	0,30
8	39,9	30,097	12,8	39,5	30,107	13,1	40,1	30,070	22,0		53,0	29,599	9,2		56,0	29,707	16,7	0,05	69,1	29,857	20,8	
9	39,1	30,093	13,3	39,5	30,140	13,1	40,4	30,077	23,3		56,0	29,589	13,1	4,6	57,5	29,861		31,17	69,0	29,858	20,3	
10	38,8	30,089	10,7	39,9	30,119	14,1	40,2	30,094	23,8		57,0	29,574	10,0	4,0	56,7	29,728		4,75	69,2	29,863	20,6	
11	39,0	30,106	14,5	40,1	30,230	14,3	40,9	30,141	24,3		57,0	29,684	11,2	1,0	60,0	29,630			69,7	29,837	20,8	
12	39,8	30,130	10,5	39,8	30,130	14,8	40,9	30,175	24,7		56,0	29,615	11,2		58,3	29,460	2,5	0,05	69,0	29,808	21,3	
13	39,6	30,113	17,2	39,8	30,079	15,0	40,4	30,132	24,9		55,5	29,694	10,7		56,2	29,628	7,8		69,0	29,881	22,3	
14	39,8	30,024	15,6	39,4	30,060	15,0	40,4	30,190	25,0		55,4	29,674	11,2		54,8	29,697	8,3		69,7	29,903	20,3	
15	39,8	30,103	19,0	39,4	30,050	15,3	40,4	30,098	25,3		56,0	29,682	10,9		56,8	29,812	14		69,0	29,903	20,3	
16	39,4	30,149	17,3	39,5	30,044	15,3	40,6	30,081	25,7		56,4	29,682	12,2		60,5	29,830	11,5		68,8	29,902	20,3	
17	39,7	30,130	16,7	39,5	30,049	16,0	40,9	30,112	25,8		56,0	29,682	12,0		57,2	29,692	8,2		68,1	29,901	21,3	
18	39,8	30,139	17,2	39,7	30,069	15,8	40,5	30,118	25,7		56,0	29,691	8,9		55,1	29,834	8,9		67,1	29,891	21,3	
19	39,8	30,139	16,7	39,8	30,069	16,0	40,3	30,125	25,8		57,0	29,760	13,0		55,5	29,839	4,5		66,0	29,847	21,3	0,05
20	39,8	30,129	17,3	39,5	30,099	16,0	40,5	30,080	25,9		56,0	29,920	12,3		56,1	29,861	3,2		67,0	29,838	20,3	
21	39,8	30,119	17,2	39,8	30,018	14,1	40,6	30,011	26,8		54,1	29,948	12,3		57,2	29,889	10,2		66,0	29,874	20,3	
22	39,8	30,111	17,3	40,0	30,092	16,0	40,5	30,024	26,9		56,0	29,894	12,3		57,0	29,892	12,3		65,0	29,853	20,3	
23	39,8	30,088	17,3	41,0	30,089	17,0	40,7	30,056	25,9		55,8	29,909	12,0		60,0	29,897	14,2		66,0	29,832	20,3	
24	39,8	30,100	17,0	41,0	30,092	15,8	40,5	30,066	25,9		57,0	30,000	12,2		60,0	29,983	14,0		66,4	29,926	20,3	
25	37,8	30,104	18,8	40,5	30,078	15,3	40,5	30,076	24,9		57,0	29,980	12,0		57,0	29,956	12,2		66,0	29,910	20,3	
26	37,8	30,130	19,2	42,0	30,057	15,0	40,8	30,068	25,0		57,4	29,937	13,0		60,0	29,902	15,0		66,1	29,892	20,3	0,35
27	39,8	30,126	17,3	40,8	30,018	15,3	40,8	30,060	25,0		57,0	29,945	13,2		56,6	29,926	14,0		66,0	29,926	20,3	
28	39,8	30,124	17,3	40,5	30,130	14,0	40,5	30,094	25,7		57,0	29,980	13,2		56,6	29,930	13,7		66,0	29,903	21,0	
29	39,7	30,114	16,8	41,0	30,095	13,0	39,8	29,975	25,0		57,0	29,918	13,2		57,0	29,897	12,2		66,0	29,902	20,3	
30	39,8	30,115	14,7				37,0	30,054	24,0	0,5	57,0	30,004	11,0		58,0	29,841	10,0		64,0	29,884	20,3	
31	39,7	30,132	16,0				36,0	30,077	1,0						59,0	29,939	12,0					

Daily Mean Height of the THERMOMETER, BAROMETER *and* HYGROMETER, *with* FALL *of* RAIN, *for the Year* 1820, *continued.*

Day.	July.				August.				September.				October.				November.				December.			
	Thermometer.	Barometer.	Hygrometer.	Fall of Rain.	Thermometer.	Barometer.	Hygrometer.	Fall of Rain.	Thermometer.	Barometer.	Hygrometer.	Fall of Rain.	Thermometer.	Barometer.	Hygrometer.	Fall of Rain.	Thermometer.	Barometer.	Hygrometer.	Fall of Rain.	Thermometer.	Barometer.	Hygrometer.	Fall of Rain.
	°	Ins.	Dry.	Ins.	°	Ins.	Dry.	Ins.	°	Ins.	Dry.	Ins.	°	Ins.	Dry. Damp.	Ins.	°	Ins.	Dry. Damp.	Ins.	°	Ins.	Dry. Damp.	Ins.
1	64,1	29,777	22,0	0,12	66,0	29,984	0,0	0,120	57,0	29,960	20,0		50,0	30,145	24,0		49,2	30,120			35,0	30,015	2,0	
2	66,0	29,999	21,0	0,02	64,0	30,047	4,0		57,4	29,937	19,2		50,0	30,107	20,0		52,0	30,145			37,1	30,032		4,0
3	66,1	29,934	20,0		64,4	30,020	4,0		56,1	29,960	19,2		49,0	30,133	23,0		50,1	30,107	0,0		34,9	29,799		8,0
4	65,1	29,879	22,0		63,0	30,111	4,2		57,4	29,970	17,2		47,1	30,140	24,0		48,1	30,128	3,1		34,0	29,916		11,0
5	67,2	29,876	23,0		64,4	30,091	4,0	0,07	60,3	29,979	17,2		50,0	30,047	20,0		48,0	30,132	0,2		37,4	30,109		5,0
6	67,2	29,870	21,0		64,1	30,102	7,0		56,0	29,968	17,0		47,1	30,040	21,2		49,2	30,150	11,0		39,0	30,104		7,0
7	68,3	29,907	20,0		64,2	29,913	10,3		56,0	29,980	15,0	0,072	48,2	29,988	22,0		49,3	30,196	13,0		39,0	30,110		8,0
8	68,1	29,941	20,0		64,1	29,980	8,2	0,025	56,1	29,954	16,3		46,3	30,112	20,0		52,0	30,196	14,1		38,4	30,138		3,0
9	67,2	29,969	22,0		64,1	30,101	8,0		56,0	29,990	15,0		46,0	30,100	19,0		51,2	30,196	12,0		37,0	30,168		4,0
10	67,0	29,993	22,0		64,1	29,997	9,3		56,1	29,993	18,3		46,1	30,094	20,2		52,2	30,098	9,0		39,0	30,120	5,2	
11	66,2	29,971	22,3	0,1	63,4	30,013	7,3		56,4	30,013	17,2		46,0	30,104	20,0		50,1	30,089	12,0		37,1	30,107	4,0	
12	66,0	29,951	20,0		63,0	30,000	7,0		56,0	29,969	17,3	0,175	46,0	30,078	19,0		50,0	30,177	10,0		38,2	30,121	0,3	
13	67,2	29,930	18,3		62,2	29,999	6,0		54,1	29,972	15,0	0,30	46,1	30,078	19,0		49,1	30,157	6,0		37,2	30,124	1,0	
14	65,2	29,922	20,0		63,1	30,027	10,0	0,3	54,0	29,953	7,0	0,10	46,0	30,090	21,0		48,0	30,170	2,0		36,0	30,090	0,1	
15	65,1	29,972	20,0		64,0	30,040	9,0		54,2	29,972	14,1		46,4	30,111	20,2		49,3	30,160	4,0		34,1	30,124	2,2	
16	66,0	29,949	19,0	0,01	63,4	29,910	8,2		54,0	29,959	14,0	0,20	45,2	30,127	20,0		50,2	30,135	3,0	0,3	36,0	30,077	3,0	
17	64,1	29,993	19,0		66,0	29,959	10,0		53,2	29,949	14,0		45,2	30,080	19,0		50,1	30,148	10,0	0,475	36,0	30,146	0,0	
18	64,0	29,982	19,0	0,025	67,0	29,940	11,0		54,0	29,970	12,0		46,0	30,037	18,0	0,75	50,2	30,154	7,1	0,075	34,0	30,121	4,0	
19	65,0	29,977	18,0	0,05	66,0	29,943	10,0		52,0	29,988	12,0		47,1	30,000	17,0	0,075	49,0	30,149	4,0	0,05	39,2	30,181	13,0	
20	65,0	29,960	18,0		67,0	29,917	10,0		54,0	29,980	12,0	0,05	48,0	29,977	17,0	1,00	51,1	30,120	7,0		37,2	30,070	7,3	
21	64,3	29,980	18,0		67,2	29,902	11,0		55,0	29,970	12,2		50,0	30,134	20,0	0,8	50,0	30,120	8,0		38,0	30,068	3,0	
22	64,1	29,990	17,0	0,3	66,2	29,897	12,2	0,55	54,1	29,982	13,2		50,1	30,102	20,0	1,0	50,1	30,160	7,0	0,3	39,0	30,016		5,0
23	65,2	29,990	17,0		65,1	29,900	12,0		54,2	29,980	14,0		52,1	30,080	20,0	0,8	52,0	30,154	9,0	0,1	39,2	30,031		7,0
24	65,0	29,970	16,0		63,4	29,940	12,0	0,775	53,2	29,920	14,0		50,2	30,135	19,0	0,85	54,0	30,159	13,0	0,05	39,0	30,055		2,0
25	64,0	29,992	15,0		64,0	29,934	10,0	0,70	52,0	29,980	12,0		50,0	30,110	20,0	0,7	54,0	30,111	8,3		39,0	30,045		7,0
26	64,0	29,980	14,0		66,0	29,961	10,0		52,0	29,990	12,0		48,1	30,120	18,0		52,0	30,120	10,2		39,0	30,040		17,0
27	65,0	30,010	16,0		65,0	29,980	10,0		52,0	29,990	12,0		48,1	30,107	18,0		52,0	30,120	10,2		38,0	30,000		18,5
28	64,1	30,003	15,3		66,0	29,980	10,0		52,0	29,990	12,0		48,2	30,100	18,0		52,0	30,120	10,2		38,0	30,000		9,0
29	64,2	30,045	7,3		66,1	29,980	10,0		52,0	29,990	12,0		48,3	30,100	18,0		52,0	30,120	10,2		38,0	30,000		16,0
30	64,2	30,045	7,3		66,0	29,980	10,0		52,0	29,990	12,0		48,3	30,100	18,0		52,0	30,120	10,2		38,0	30,000		
31	64,2	30,045	7,3		66,0	29,980	10,0		52,0	29,990	12,0		48,3	30,100	18,0		52,0	30,120	10,2		38,0	30,000		
	65,2	30,045	10,3		66,0	29,980	10,0		57,2	30,107	21,2		49,0	30,111	4,0	4,7	52,0	30,120	10,2	4,0	39,0	30,000	4,0	

Daily Mean Heights of the Thermometer, Barometer and Hygrometer, with Fall of Rain, for the Year 1821.

Day.	January.				February.				March.				April.				May.				June.			
	Thermometer.	Barometer.	Hygrometer.	Fall of Rain.	Thermometer.	Barometer.	Hygrometer.	Fall of Rain.	Thermometer.	Barometer.	Hygrometer.	Fall of Rain.	Thermometer.	Barometer.	Hygrometer.	Fall of Rain.	Thermometer.	Barometer.	Hygrometer.	Fall of Rain.	Thermometer.	Barometer.	Hygrometer.	Fall of Rain.
	°	Inches.	Dry.	Damp.	Inc.	°	Inches.	Dry.	Inc.	°	Inches.	Dry.	Inc.	°	Inches.	Dry.	Inc.	°	Inches.	Dry.	Inc.	°	Inches.	Dry.	Inc.
1	37,1	29,286		5,5	0,5	38,4	30,009	3,3		43,5	30,264	14,0		45,1	29,197	14,4		46,8	29,893	23,8		60,0	29,763	30,1	
2	37,4	29,262		11,8	1,27	37,8	30,113	11,5		43,1	29,951	13,5		45,5	29,153	14,8		46,5	29,868	24,3		60,7	29,768	29,1	
3	37,6	29,084		5,6		39,0	30,109	11,6		40,7	29,817	15,0		45,5	29,179	16,0		47,5	29,809	17,6		58,8	29,809	27,4	
4	36,5	30,071		3,9		39,8	30,145	11,3		38,5	30,060	14,0		45,1	29,103	16,1		47,5	29,867	24,6		58,5	29,862	30,5	
5	37,8	30,131		3,9		39,8	30,113	12,4		41,7	30,092	18,3		45,5	29,125	15,5		47,5	29,939	23,5		59,2	29,914	31,5	
6	37,8	30,137	0,9			39,5	30,119	12,3		40,7	30,164	18,8		45,5	29,146	17,1		47,5	29,960	23,5		59,3	29,919	31,5	
7	37,7	30,136		4,8	0,05	39,1	30,171	10,8		41,4	30,151	17,6		45,1	29,149	16,0		47,5	29,919	23,5		59,5	29,918	31,5	
8	37,8	30,149		7,8	0,56	39,4	30,171	10,8		42,7	30,132	18,1		45,5	29,103	16,4		47,5	29,884	23,5		59,5	29,918	31,5	
9	37,8	30,213		3,8		39,6	30,201	10,8		41,8	30,134	15,0	0,32	45,5	29,193	17,1		47,5	29,902	23,5		59,5	29,940	31,5	
10	37,8	30,204	3,1			39,4	30,203	10,8		40,6	30,110	3,6		45,5	29,068	16,3		47,5	29,963	16,8		59,5	29,950	31,5	
11	37,8	30,201	4,5			39,4	30,172	17,3		40,7	30,090	11,5		45,1	29,096	16,2		47,5	29,954	16,8		59,5	29,956	31,5	
12	37,9	30,271	4,8			39,5	30,202	12,4		40,6	30,082	13,5		45,5	29,068	16,3		47,5	29,884	17,3		59,5	29,962	31,5	
13	37,8	30,229	4,8			39,4	30,199	12,8		40,5	30,091	13,5		45,1	29,089	16,2		47,5	29,894	16,2		59,5	29,963	31,5	
14	37,8	30,223	4,8			39,4	30,209	13,3		38,4	30,177	13,3		45,1	29,091	17,1		47,5	29,893	16,3		59,5	29,963	31,5	
15	38,1	30,209	4,7			39,4	30,210	12,9		38,5	30,197	11,6		45,1	29,091	17,8		47,5	29,891	17,3		59,5	29,963	31,5	
16	37,8	30,199	4,3			39,4	30,223	13,8		38,5	30,197	11,4		45,1	30,011	18,0		48,4	29,897	17,3		60,3	29,965	31,5	
17	38,8	30,200	4,3			39,5	30,229	14,1		41,8	30,150	11,6		45,1	30,031	15,7		48,5	29,953	16,2		60,3	29,967	31,5	
18	38,8	30,213	4,6			39,5	30,189	15,0		44,1	30,010	13,5		45,1	29,975	16,4		48,5	29,885	16,4		60,3	29,965	31,5	
19	38,8	30,272	5,7			39,4	30,227	14,4		44,7	30,060	13,8		45,1	30,006	15,3		48,5	29,845	16,4		59,7	29,929	30,5	
20	38,1	30,283	3,6		0,05	39,2	30,234	13,9		44,8	30,020	13,8		45,2	29,917	14,4		48,5	29,838	17,1		59,5	29,898	29,1	
21	38,0	30,260	3,5			39,4	30,186	14,3		43,5	30,017	12,4		45,1	29,954	14,6		48,5	29,799	16,4		59,5	29,893	29,5	
22	38,0	30,239	3,5			39,4	30,167	15,0		43,6	30,025	12,6		45,5	29,914	16,5		48,5	29,768	14,6		59,5	29,899	29,5	
23	38,1	30,188	3,5			39,5	30,134	17,1		44,3	30,032	12,9		45,5	30,023	15,0		48,5	29,806	15,1		59,4	29,917	29,5	
24	38,2	30,213	3,5			39,1	30,134	15,4		43,5	30,039	12,6		45,5	29,958	17,6		48,5	29,806	15,3		59,5	29,946	29,5	
25	38,4	30,215	3,4			39,5	30,191	14,6		43,5	30,059	13,6		45,5	29,969	16,3		48,5	29,825	15,3		59,5	29,963	29,5	
26	38,4	30,216	3,5			39,1	30,093	14,3		44,9	30,154	14,3		45,5	30,009	16,0		48,5	29,853	14,6		59,5	29,971	29,5	
27	38,6	30,242	3,7			39,0	29,963	15,3		44,7	30,144	14,3		45,5	30,037	15,3		48,5	29,851	15,3		59,5	29,959	29,5	1,0
28	38,6	30,237	3,7			39,4	29,958	15,6		45,5	30,109	14,3		45,5	30,033	15,3		48,4	29,919	15,3		59,5	29,965	29,5	
29	38,5	30,202	3,6							45,6	30,111	14,4		45,1	30,001	17,6	1,7	48,4	29,979	20,6		59,5	29,962	29,5	
30	38,5	30,152	3,5							44,5	30,170	14,3		45,1	30,043	15,3		48,5	29,991	20,3		59,5	29,953	29,5	0,16
31	38,5	30,097	3,5							43,5	30,112	14,6						48,5	29,992	20,3					

Daily Mean Height of the Thermometer, Barometer and Hygrometer, with Fall of Rain, for the Year 1821, continued.

Day.	July.				August.				September.				October.				November.				December.			
	Thermometer.	Barometer.	Hygrometer.	Fall of Rain.	Thermometer.	Barometer.	Hygrometer.	Fall of Rain.	Thermometer.	Barometer.	Hygrometer.	Fall of Rain.	Thermometer.	Barometer.	Hygrometer.	Fall of Rain.	Thermometer.	Barometer.	Hygrometer.	Fall of Rain.	Thermometer.	Barometer.	Hygrometer.	Fall of Rain.
	°	Ins.	Dry.	Ins.	°	Ins.	Dry.	Ins.	°	Ins.	Dry.	Ins.	°	Ins.	Dry.	Ins.	°	Ins.	Dry. Damp.	Ins.	°	Ins.	Dry.	Ins.
1	69,5	29,940	20,5		64,2	29,944	23,9	0,075	60,2	29,951	17,1	1,71	62,8	30,092	19,1		60,1	30,010	6,4	1,0	60,2	30,160	14,9	
2	69,0	29,939	27,1		66,1	29,910	27,8	0,195	62,0	30,002	24,6	0,21	59,2	30,208	10,1		58,1	30,074	9,9	1,25	57,6	30,177	20,9	
3	70,4	29,903	30,7		66,1	29,910	27,8	11,75	60,3	29,986	27,1		61,0	30,068	24,4	0,07	59,0	30,021	1,8	2,05	59,0	30,152	15,2	
4	71,8	29,903	30,7		64,1	29,921	23,1	0,125	60,1	29,949	25,8		59,8	30,078	17,8		59,0	30,102	1,8	0,05	59,2	30,155	16,3	0,75
5	71,8	29,903	27,6		64,1	29,903	28,3	0,1	60,2	29,914	27,7		60,4	29,998	18,4	0,49	58,8	30,103	1,67		57,7	30,197	15,9	
6	69,1	29,973	25,1		66,1	29,900	27,1		60,3	29,899	27,8		59,4	29,997	17,8	0,125	58,8	30,113	6,5		57,4	30,237	21,8	
7	70,0	29,888	30,3		66,1	29,877	27,4		60,3	29,903	24,3	0,35	59,2	29,999	17,8		58,8	30,116	9,9		59,8	30,237	20,8	
8	69,2	29,914	25,8		65,7	29,874	25,8		60,4	29,909	28,1		59,0	30,003	19,7		58,0	30,100	1,19		58,0	30,178	19,8	
9	69,0	29,877	28,8		67,1	29,906	28,3		60,1	29,909	27,1	0,45	59,2	30,000	19,8		57,0	30,100	9,3		57,1	30,103	19,4	
10	69,2	29,914	24,1		67,1	29,919	27,1	0,32	58,8	29,909	30,3	0,25	59,8	29,984	22,8		56,3	30,096	6,6	3,55	57,0	30,103	19,3	
11	69,2	29,909	28,8		66,1	29,944	28,8		60,4	29,919	27,1	0,275	59,0	29,944	22,3		56,2	30,097	7,7	0,9	57,0	30,150	20,8	
12	69,4	29,909	28,8		66,1	29,909	28,8		60,2	29,909	27,8		60,1	29,903	22,8		57,0	30,093	9,8		58,0	30,150	20,8	
13	69,0	29,903	28,8		66,1	29,903	28,8		60,2	29,909	27,8		59,2	29,986	22,8		58,0	30,060	9,4		57,8	30,150	20,8	
14	69,2	29,903	28,3	0,075	67,0	29,947	28,8		60,1	29,909	27,8	0,19	59,1	30,004	22,7		58,0	30,001	6,8		57,4	30,072	19,8	
15	69,4	29,909	28,7		67,0	29,940	27,8	0,075	60,2	29,919	28,0	0,45	59,2	30,100	22,7	0,4	58,0	30,072	10,0		57,4	30,072	19,8	
16	69,4	29,909	28,8	0,15	66,1	29,917	27,8		60,0	29,917	27,1		59,0	30,093	22,4	0,125	58,0	30,122	10,8		57,8	30,122	19,8	
17	69,2	29,909	28,8		66,1	29,907	28,3		60,4	29,909	27,8		59,1	30,103	22,8		58,0	30,102	10,2		57,8	30,102	19,8	
18	69,4	29,909	28,8		66,1	29,903	28,3		60,3	29,909	27,8		59,2	30,103	17,2		58,0	30,097	10,2		57,8	30,102	19,8	
19	69,2	29,909	28,8	0,175	66,1	29,907	27,8		60,2	29,909	27,8		59,2	30,103	18,8	0,225	58,0	30,116	10,8		57,8	30,102	19,8	
20	69,2	29,909	28,8	0,45	66,1	29,911	28,3		60,2	29,909	27,8		59,2	30,103	18,8	0,475	58,1	30,102	10,8		57,8	30,102	19,8	
21	69,2	29,909	28,8	0,25	66,1	29,909	28,3	0,05	60,2	29,909	27,8	0,175	59,2	30,103	18,8		58,1	30,102	10,8		57,8	30,102	19,8	
22	69,2	29,909	28,8		66,1	29,909	28,3		60,2	29,909	27,8		59,2	30,103	18,8		58,1	30,102	10,8		57,8	30,102	19,8	
23	69,2	29,909	28,8		66,1	29,909	28,3		60,2	29,909	27,8		59,2	30,103	18,8		58,1	30,102	10,8		57,8	30,102	19,8	
24	69,2	29,909	28,8		66,1	29,909	28,3		60,2	29,909	27,8		59,2	30,103	18,8		58,1	30,102	10,8		57,8	30,102	19,8	
25	69,2	29,909	28,8		66,1	29,909	28,3		60,2	29,909	27,8		59,2	30,103	18,8		58,1	30,102	10,8		57,8	30,102	19,8	
26	69,2	29,909	28,8		66,1	29,909	28,3		60,2	29,909	27,8		59,2	30,103	18,8		58,1	30,102	10,8		57,8	30,102	19,8	
27	69,2	29,909	28,8		66,1	29,909	28,3		60,2	29,909	27,8		59,2	30,103	18,8		58,1	30,102	10,8		57,8	30,102	19,8	
28	69,2	29,909	28,8		66,1	29,909	28,3		60,2	29,909	27,8		59,2	30,103	18,8		58,1	30,102	10,8		57,8	30,102	19,8	
29	69,2	29,909	28,8		66,1	29,909	28,3		60,2	29,909	27,8		59,2	30,103	18,8		58,1	30,102	10,8		57,8	30,102	19,8	
30	69,2	29,909	28,8		66,1	29,909	28,3		60,2	29,909	27,8		59,2	30,103	18,8		58,1	30,102	10,8		57,8	30,102	19,8	
31	69,2	29,909	28,8		66,1	29,909	28,3		60,2	29,909	27,8		59,2	30,103	18,8		58,1	30,102	10,8		57,8	30,102	19,8	

TABLE IV.

Mean Height of the Barometer for each Day of the Year between 1796 and 1823.

JANUARY.

Day.	1796	1797	1798	1799	1800	1801	1802	1803	1804	1805	1806	1807	1808	1809	1810	1811	1812	1813	1814	1815	1816	1817	1818	1819	1820	1821	Approximate Mean.	Corrections.	True Mean.
	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Inches.	Ins.
1		[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2		[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6		[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7		[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9		[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10		[illegible]		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18		[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19		[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21		[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

FEBRUARY.

Day.	1796	1797	1798	1799	1800	1801	1802	1803	1804	1805	1806	1807	1808	1809	1810	1811	1812	1813	1814	1815	1816	1817	1818	1819	1820	1821	Means.	Correction.	Temperature.
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
1	30,72	29,60	30,17	30,26	30,13	30,02	30,07	30,04	30,11	30,48	30,14	30,14	30,26	29,77	30,22	30,26	30,18	30,07	30,16	30,07	30,17	30,22	30,13	30,17	30,22	30,16	30,162	0,002	30,164
2	30,62	29,70	30,13	30,07	30,02		30,04	30,01	30,11	30,10	30,13	30,09	30,08	30,07	30,06	30,06	30,04	30,03	30,04	30,06	30,04	30,07	30,06	30,04	30,06	30,03	30,069	0,002	30,069
3	30,57	29,75	30,05	30,04	30,13	30,05	30,01	30,07	30,07	30,10	30,12	30,08	30,04	30,04	30,06	30,04	30,02	30,02	30,02	30,02	30,02	30,04	30,04	30,04	30,04	30,03	30,057	0,002	30,059
4	30,57	30,00	29,97	30,04	30,07	30,01	30,00	30,10	30,03	30,02	30,09	30,06	30,01	30,04	30,04	30,04	30,02	30,02	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,042	0,002	30,044
5	30,57	30,00	29,97	30,04	30,07	30,01	30,00	30,10	30,03	30,02	30,09	30,06	30,01	30,04	30,04	30,04	30,02	30,02	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,042	0,002	30,044
6	30,57	30,00	29,97	30,04	30,07	30,01	30,00	30,10	30,03	30,02	30,09	30,06	30,01	30,04	30,04	30,04	30,02	30,02	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,042	0,002	30,044
7	30,57	30,00	29,97	30,04	30,07	30,01	30,00	30,10	30,03	30,02	30,09	30,06	30,01	30,04	30,04	30,04	30,02	30,02	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,042	0,002	30,044
8	30,57	30,00	29,97	30,04	30,07	30,01	30,00	30,10	30,03	30,02	30,09	30,06	30,01	30,04	30,04	30,04	30,02	30,02	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,042	0,002	30,044
9	30,57	30,00	29,97	30,04	30,07	30,01	30,00	30,10	30,03	30,02	30,09	30,06	30,01	30,04	30,04	30,04	30,02	30,02	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,042	0,002	30,044
10	30,57	30,00	29,97	30,04	30,07	30,01	30,00	30,10	30,03	30,02	30,09	30,06	30,01	30,04	30,04	30,04	30,02	30,02	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,042	0,002	30,044
11	30,57	30,00	29,97	30,04	30,07	30,01	30,00	30,10	30,03	30,02	30,09	30,06	30,01	30,04	30,04	30,04	30,02	30,02	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,042	0,002	30,044
12	30,57	30,00	29,97	30,04	30,07	30,01	30,00	30,10	30,03	30,02	30,09	30,06	30,01	30,04	30,04	30,04	30,02	30,02	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,042	0,002	30,044
13	30,57	30,00	29,97	30,04	30,07	30,01	30,00	30,10	30,03	30,02	30,09	30,06	30,01	30,04	30,04	30,04	30,02	30,02	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,042	0,002	30,044
14	30,57	30,00	29,97	30,04	30,07	30,01	30,00	30,10	30,03	30,02	30,09	30,06	30,01	30,04	30,04	30,04	30,02	30,02	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,042	0,002	30,044
15	30,57	30,00	29,97	30,04	30,07	30,01	30,00	30,10	30,03	30,02	30,09	30,06	30,01	30,04	30,04	30,04	30,02	30,02	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,042	0,002	30,044
16	30,57	30,00	29,97	30,04	30,07	30,01	30,00	30,10	30,03	30,02	30,09	30,06	30,01	30,04	30,04	30,04	30,02	30,02	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,042	0,002	30,044
17	30,57	30,00	29,97	30,04	30,07	30,01	30,00	30,10	30,03	30,02	30,09	30,06	30,01	30,04	30,04	30,04	30,02	30,02	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,042	0,002	30,044
18	30,57	30,00	29,97	30,04	30,07	30,01	30,00	30,10	30,03	30,02	30,09	30,06	30,01	30,04	30,04	30,04	30,02	30,02	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,042	0,002	30,044
19	30,57	30,00	29,97	30,04	30,07	30,01	30,00	30,10	30,03	30,02	30,09	30,06	30,01	30,04	30,04	30,04	30,02	30,02	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,042	0,002	30,044
20	30,57	30,00	29,97	30,04	30,07	30,01	30,00	30,10	30,03	30,02	30,09	30,06	30,01	30,04	30,04	30,04	30,02	30,02	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,042	0,002	30,044
21	30,57	30,00	29,97	30,04	30,07	30,01	30,00	30,10	30,03	30,02	30,09	30,06	30,01	30,04	30,04	30,04	30,02	30,02	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,042	0,002	30,044
22	30,57	30,00	29,97	30,04	30,07	30,01	30,00	30,10	30,03	30,02	30,09	30,06	30,01	30,04	30,04	30,04	30,02	30,02	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,042	0,002	30,044
23	30,57	30,00	29,97	30,04	30,07	30,01	30,00	30,10	30,03	30,02	30,09	30,06	30,01	30,04	30,04	30,04	30,02	30,02	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,042	0,002	30,044
24	30,57	30,00	29,97	30,04	30,07	30,01	30,00	30,10	30,03	30,02	30,09	30,06	30,01	30,04	30,04	30,04	30,02	30,02	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,042	0,002	30,044
25	30,57	30,00	29,97	30,04	30,07	30,01	30,00	30,10	30,03	30,02	30,09	30,06	30,01	30,04	30,04	30,04	30,02	30,02	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,042	0,002	30,044
26	30,57	30,00	29,97	30,04	30,07	30,01	30,00	30,10	30,03	30,02	30,09	30,06	30,01	30,04	30,04	30,04	30,02	30,02	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,042	0,002	30,044
27	30,57	30,00	29,97	30,04	30,07	30,01	30,00	30,10	30,03	30,02	30,09	30,06	30,01	30,04	30,04	30,04	30,02	30,02	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,042	0,002	30,044
28	30,57	30,00	29,97	30,04	30,07	30,01	30,00	30,10	30,03	30,02	30,09	30,06	30,01	30,04	30,04	30,04	30,02	30,02	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,04	30,042	0,002	30,044
29	30,57																												

MARCH.

Days.	1781	1797	1798	1799	1800	1801	1802	1803	1804	1805	1806	1807	1813	1814	1815	1816	1817	1818	1819	1820	1821	Means.	Correction.	True.
	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inclina.	Inc.
1	30,070	30,000	30,000	30,067	30,000	30,000	30,122	30,100	30,100	30,000	30,000	29,977	29,900	29,900	29,942	30,000	30,000	30,000	30,000	30,000	30,000	30,004	0,020	30,024
2	30,132	30,134	30,130	30,130			30,000	30,094	30,100	30,147	30,147	30,092	30,018	30,018	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,103	30,000	0,010	30,010
3	30,140	30,167	30,140	30,092	30,097	30,000	30,000	30,124	30,000	30,130	30,130	30,130	30,000	30,000	30,312	30,000	29,900	30,000	30,000	30,041	30,000	30,000	30,147	30,077	0,010	30,067
4	30,207	30,000	30,207	30,144	30,207		30,000	30,000	30,000	30,114	30,130	30,100	30,000	29,900	29,900	29,900		29,900	30,000	30,000	30,000	30,000	30,000	30,000	0,010	30,010
5	30,207	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,010	30,010
6	30,182	30,000	30,137	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,010	30,010
7	30,000	30,000	30,000	30,000			30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,010	30,010
8	30,000	30,000	30,000	30,000			30,000	30,000	30,000	30,000	30,000	30,000		30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,010	30,010
9	30,147	30,000	30,000	30,000		30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,010	30,010
10	30,124	30,000	30,000	30,000	30,000	30,111		30,000	30,000	30,000	30,000	30,117	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,010	30,010
11	30,110	30,000	30,000	30,000	30,000	30,117	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,010	30,010
12	30,130	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,010	30,010
13	30,150	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,010	30,010
14	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,010	30,010
15	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,010	30,010
16	30,000	30,000	30,000	30,000		30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,010	30,010
17	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,010	30,010
18	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,010	30,010
19	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,010	30,010
20	30,000	30,000	30,000	30,000			30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,010	30,010
21	30,000	30,000	30,000	30,000	30,000			30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,010	30,010
22	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,010	30,010
23	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,010	30,010
24	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,010	30,010
25	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,010	30,010
26	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,010	30,010
27	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,010	30,010
28	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,010	30,010
29	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,010	30,010
30	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,010	30,010
31	30,000	30,000	30,000		30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,010	30,010

APRIL.

Days.	1796	1797	1798	1799	1800	1801	1802	1803	1804	1805	1806	1807	1808	1809	1810	1811	1812	1813	1814	1815	1816	1817	1818	1819	1820	1821	1822	Mean.	Correction.	Time.
	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inches.	Inches.	Inc.
1	30,011	29,974	29,991	30,003	30,079		30,007	29,972	30,007	30,007	30,000	29,974	29,988	29,977	29,965	29,960	30,020	30,007	29,990	29,930	29,930	30,010	30,000	29,990	29,923	30,105	29,986	0,005	29,990
2	30,011	29,969	29,962	30,071	29,974		29,944	29,912	29,929	29,924	29,960	29,979	29,967	29,962	29,950	29,922	29,990	29,950	29,922	29,910	29,947	30,007	29,990	29,956	29,944	30,120	29,992	0,005	29,977
3	30,010	29,956	29,941	30,063	29,974		29,920	29,901	29,922	29,930	29,961	29,961	29,961	29,944	29,911	29,910	29,947	29,897	29,900	29,910	29,947	29,997	29,990	29,956	29,944	30,170	29,991	0,005	29,986
4	30,000	29,948	29,932	30,053	29,972		29,914	29,897	29,917	29,927	29,957	29,957	29,954	29,934	29,901	29,911	29,941	29,911	29,914	29,900	29,947	29,990	29,990	29,951	29,941	30,163	29,986	0,005	29,980
5	30,011	29,939	29,934	30,047	29,969		29,907	29,894	29,914	29,924	29,954	29,954	29,951	29,931	29,901	29,911	29,941	29,911	29,914	29,900	29,947	29,990	29,990	29,951	29,941	30,160	29,986	0,005	29,980
6	30,000	29,936	29,927	30,041	29,967		29,904	29,891	29,911	29,921	29,951	29,951	29,948	29,928	29,898	29,908	29,938	29,908	29,911	29,897	29,944	29,987	29,987	29,948	29,938	30,157	29,983	0,005	29,977
7	30,000	29,936	29,924	30,038	29,967		29,904	29,891	29,911	29,921	29,951	29,951	29,948	29,928	29,898	29,908	29,938	29,908	29,911	29,897	29,944	29,987	29,987	29,948	29,938	30,157	29,983	0,005	29,977
8	30,000	29,933	29,921	30,035	29,964		29,901	29,888	29,908	29,918	29,948	29,948	29,945	29,925	29,895	29,905	29,935	29,905	29,908	29,894	29,941	29,984	29,984	29,945	29,935	30,154	29,980	0,005	29,974
9	30,000	29,933	29,921	30,035	29,964		29,901	29,888	29,908	29,918	29,948	29,948	29,945	29,925	29,895	29,905	29,935	29,905	29,908	29,894	29,941	29,984	29,984	29,945	29,935	30,154	29,980	0,005	29,974
10	30,000	29,933	29,921	30,035	29,964		29,901	29,888	29,908	29,918	29,948	29,948	29,945	29,925	29,895	29,905	29,935	29,905	29,908	29,894	29,941	29,984	29,984	29,945	29,935	30,154	29,980	0,005	29,974
11	30,000	29,933	29,921	30,035	29,964		29,901	29,888	29,908	29,918	29,948	29,948	29,945	29,925	29,895	29,905	29,935	29,905	29,908	29,894	29,941	29,984	29,984	29,945	29,935	30,154	29,980	0,005	29,974
12	30,000	29,933	29,921	30,035	29,964		29,901	29,888	29,908	29,918	29,948	29,948	29,945	29,925	29,895	29,905	29,935	29,905	29,908	29,894	29,941	29,984	29,984	29,945	29,935	30,154	29,980	0,005	29,974
13	30,000	29,933	29,921	30,035	29,964		29,901	29,888	29,908	29,918	29,948	29,948	29,945	29,925	29,895	29,905	29,935	29,905	29,908	29,894	29,941	29,984	29,984	29,945	29,935	30,154	29,980	0,005	29,974
14	30,000	29,933	29,921	30,035	29,964		29,901	29,888	29,908	29,918	29,948	29,948	29,945	29,925	29,895	29,905	29,935	29,905	29,908	29,894	29,941	29,984	29,984	29,945	29,935	30,154	29,980	0,005	29,974
15	30,000	29,933	29,921	30,035	29,964		29,901	29,888	29,908	29,918	29,948	29,948	29,945	29,925	29,895	29,905	29,935	29,905	29,908	29,894	29,941	29,984	29,984	29,945	29,935	30,154	29,980	0,005	29,974
16	30,000	29,933	29,921	30,035	29,964		29,901	29,888	29,908	29,918	29,948	29,948	29,945	29,925	29,895	29,905	29,935	29,905	29,908	29,894	29,941	29,984	29,984	29,945	29,935	30,154	29,980	0,005	29,974
17	30,000	29,933	29,921	30,035	29,964		29,901	29,888	29,908	29,918	29,948	29,948	29,945	29,925	29,895	29,905	29,935	29,905	29,908	29,894	29,941	29,984	29,984	29,945	29,935	30,154	29,980	0,005	29,974
18	30,000	29,933	29,921	30,035	29,964		29,901	29,888	29,908	29,918	29,948	29,948	29,945	29,925	29,895	29,905	29,935	29,905	29,908	29,894	29,941	29,984	29,984	29,945	29,935	30,154	29,980	0,005	29,974
19	30,000	29,933	29,921	30,035	29,964		29,901	29,888	29,908	29,918	29,948	29,948	29,945	29,925	29,895	29,905	29,935	29,905	29,908	29,894	29,941	29,984	29,984	29,945	29,935	30,154	29,980	0,005	29,974
20	30,000	29,933	29,921	30,035	29,964		29,901	29,888	29,908	29,918	29,948	29,948	29,945	29,925	29,895	29,905	29,935	29,905	29,908	29,894	29,941	29,984	29,984	29,945	29,935	30,154	29,980	0,005	29,974
21	30,000	29,933	29,921	30,035	29,964		29,901	29,888	29,908	29,918	29,948	29,948	29,945	29,925	29,895	29,905	29,935	29,905	29,908	29,894	29,941	29,984	29,984	29,945	29,935	30,154	29,980	0,005	29,974
22	30,000	29,933	29,921	30,035	29,964		29,901	29,888	29,908	29,918	29,948	29,948	29,945	29,925	29,895	29,905	29,935	29,905	29,908	29,894	29,941	29,984	29,984	29,945	29,935	30,154	29,980	0,005	29,974
23	30,000	29,933	29,921	30,035	29,964		29,901	29,888	29,908	29,918	29,948	29,948	29,945	29,925	29,895	29,905	29,935	29,905	29,908	29,894	29,941	29,984	29,984	29,945	29,935	30,154	29,980	0,005	29,974
24	30,000	29,933	29,921	30,035	29,964		29,901	29,888	29,908	29,918	29,948	29,948	29,945	29,925	29,895	29,905	29,935	29,905	29,908	29,894	29,941	29,984	29,984	29,945	29,935	30,154	29,980	0,005	29,974
25	30,000	29,933	29,921	30,035	29,964		29,901	29,888	29,908	29,918	29,948	29,948	29,945	29,925	29,895	29,905	29,935	29,905	29,908	29,894	29,941	29,984	29,984	29,945	29,935	30,154	29,980	0,005	29,974
26	30,000	29,933	29,921	30,035	29,964		29,901	29,888	29,908	29,918	29,948	29,948	29,945	29,925	29,895	29,905	29,935	29,905	29,908	29,894	29,941	29,984	29,984	29,945	29,935	30,154	29,980	0,005	29,974
27	30,000	29,933	29,921	30,035	29,964		29,901	29,888	29,908	29,918	29,948	29,948	29,945	29,925	29,895	29,905	29,935	29,905	29,908	29,894	29,941	29,984	29,984	29,945	29,935	30,154	29,980	0,005	29,974
28	30,000	29,933	29,921	30,035	29,964		29,901	29,888	29,908	29,918	29,948	29,948	29,945	29,925	29,895	29,905	29,935	29,905	29,908	29,894	29,941	29,984	29,984	29,945	29,935	30,154	29,980	0,005	29,974
29	30,000	29,933	29,921	30,035	29,964		29,901	29,888	29,908	29,918	29,948	29,948	29,945	29,925	29,895	29,905	29,935	29,905	29,908	29,894	29,941	29,984	29,984	29,945	29,935	30,154	29,980	0,005	29,974
30	30,000	29,933	29,921	30,035	29,964		29,901	29,888	29,908	29,918	29,948	29,948	29,945	29,925	29,895	29,905	29,935	29,905	29,908	29,894	29,941	29,984	29,984	29,945	29,935	30,154	29,980	0,005	29,974

MAY.

Day.	1790	1792	1798	1799	1800	1801	1802	1803	1804	1805	1806	1807	1813	1814	1815	1816	1817	1818	1819	1820	1821	Mean.	Correction.	True.
	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Inches.	Ins.
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
5	[illegible]	[illegible]	[illegible]		[illegible]			[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
12	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
13	[illegible]	[illegible]		[illegible]	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
20	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
21	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]
31	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.002	[illegible]

JUNE.

Days.	1796	1797	1798	1799	1800	1801	1802	1803	1804	1805	1806	1807	1813	1814	1815	1816	1817	1818	1819	1820	1821	1822	Means.	Correc-tion.	Tens.
	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inches	Inc.
1	29,902	29,910	29,797	29,842	29,814	29,917	29,941	29,742	29,868	29,901	29,881	29,803	29,747	29,827	29,707	29,973	29,901	29,941	29,902	29,934	29,949	29,902	29,867	0,000	29,764
2	29,901	29,880	29,792	29,929	29,947	29,880	29,910	29,761	29,920	29,900	29,914	29,879	29,778	29,900	29,813	29,890	29,971	29,850	29,933	29,939	29,902	29,847	29,892	0,000	29,810
3	29,910	29,921	29,914	29,955	29,909	29,840	29,917	29,827	29,903	29,953	29,876	29,806	29,774	29,900	29,880	29,977	29,907	29,826	29,949	29,946	29,946	29,940	29,909	0,000	29,859
4	29,799	29,908	29,772	29,950	29,904	29,843	29,856	29,900	29,900	29,900	29,934	29,847	29,748	29,870	29,870	29,977	29,874	29,845	29,887	29,906	29,907	29,902	29,890	0,000	29,840
5	29,907	29,900	29,771	29,911	29,911	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,840
6	29,908	29,902	29,914	29,907	29,907	29,920	29,900	29,847	29,907	29,900	29,923		29,720	29,850	29,819	29,799	29,903	29,843	29,909	29,843	29,903	29,903	29,891	0,000	29,831
7	29,903	29,901	29,771	29,903	29,903	29,900	29,900	29,847	29,907	29,900	29,900	29,791	29,734	29,905	29,901	29,947	29,900	29,903	29,901	29,900	29,900	29,900	29,900	0,000	29,840
8	29,900	29,796	29,900	29,903	29,907		29,910	29,900	29,900		29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,840
9	29,900	29,900	29,900	29,900	29,912		29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,840
10	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,840
11	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,840
12	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,840
13	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,840
14	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,840
15	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,840
16	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,840
17	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,840
18	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,840
19	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,840
20	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,840
21	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,840
22	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,840
23	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,840
24	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,840
25	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,840
26	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,840
27	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,840
28	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,840
29	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,840
30	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,840

Printed publicly, Barometer at Manchesterian Observatory.

JULY.

Day.	1796	1797	1798	1799	1800	1801	1802	1803	1804	1805	1806	1807	1808	1809	1810	1811	1812	1813	1814	1815	1816	1817	1818	1819	1820	1821	Mean.	Correction.	True.
	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Inches.	Ins.
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,007	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,007	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,007	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,007	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,007	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,007	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,007	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,007	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,007	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,007	[illegible]
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,009	[illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,009	[illegible]
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,009	[illegible]
14	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,009	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,009	[illegible]
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,009	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,009	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,009	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,009	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,009	[illegible]
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,009	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,009	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,009	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,009	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,009	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,009	[illegible]
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,009	[illegible]
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,009	[illegible]
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,009	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,009	[illegible]
31	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,009	[illegible]

AUGUST.

Day.	1781	1787	1794	1795	1809	1808	1802	1801	1804	1805	1800	1807	1813	1814	1815	1816	1817	1818	1819	1820	1821	Mean.	Correction.	True.
	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Inches.	Ins.
1	29,962	29,777	29,944	29,972	29,886	29,765	29,909	29,847	29,897	29,864	29,945	29,902	29,779	29,980	29,981	29,934	29,943	29,966	29,918	29,891	29,970	29,902	0,000	29,902
2	29,969	29,774	30,000	29,948	29,940	29,847	29,870	29,913	29,980	29,970	29,944	29,956	29,784	29,998	29,997	29,977	29,946	29,998	29,958	29,947	29,977	29,944	0,000	29,944
3	29,999	29,796	30,000	29,990	29,980	29,937	29,900	29,960	29,980	29,961	29,941	29,900	29,798	29,984	29,983	29,987	29,964	29,983	29,980	29,950	29,980	29,960	0,000	29,960
4	29,960	29,962	29,894	29,886	29,862	29,867	29,851	29,893	29,937	29,900	29,900	29,861	29,780	29,960	29,960	29,896	29,931	29,962	29,914	29,924	29,956	29,907	0,000	29,907
5	29,909	29,913	29,872	29,852	29,862	29,874	29,900	29,854	29,898	29,900	29,900	29,856	29,810	29,900	29,900	29,910	29,884	29,900	29,908	29,884	29,900	29,892	0,000	29,892
6	29,900	29,870	29,900	29,852	29,900	29,900	29,900	29,900	29,943	29,911	29,900	29,900	29,870	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,900
7	29,961	29,849	29,932	29,852	29,870		29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,911	29,900	29,900	29,900	29,900	29,977	29,900	0,000	29,900
8	29,900	29,910	29,900	29,900	29,900	29,849	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,900
9	29,900	29,900	29,900	29,900	29,900		29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,900
10	29,900	29,900	29,900	29,900	29,900		29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,900
11	29,900	29,900	29,900	29,900	29,900		29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,900
12	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,900
13	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,900
14	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,900
15	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,900
16	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,900
17	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,900
18	29,900	29,900	29,900		29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,900
19	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,900
20	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,900
21	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,900
22	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,900
23	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,900
24	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,900
25	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,900
26	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,900
27	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,900
28	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,900
29	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,900
30	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,900
31	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	29,900	0,000	29,900

SEPTEMBER.

Day.	1796	1797	1798	1799	1800	1801	1802	1803	1804	1805	1806	1807	1813	1814	1815	1816	1817	1818	1819	1820	1821	Mean.	Correction.	True.
	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Inches.	Ins.
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

OCTOBER.

Days.	1790	1797	1798	1799	1800	1801	1802	1803	1804	1805	1806	1807	1808	1809	1810	1811	1812	1813	1814	1815	1816	1817	1818	1819	1820	1821	Means	Quantity of Rain.	Tens.
	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inches.	Inc.
1	29,368		29,861	29,761	29,978	29,881	29,889		29,867	29,914	29,894	29,868	29,896	29,897	29,790	29,827	29,874	29,966	29,814	29,954	29,929	29,848	29,864	29,940	29,962	29,950		0,002	29,950
2	29,887	29,902	29,907	29,957	29,947	29,942	29,968		29,956	29,956	29,956	29,944	29,900	29,747	29,852	29,866	29,937	29,952	29,963	29,957	29,952	29,957	29,963	29,942	29,957	29,957		0,002	29,957
3	29,960	29,941	29,955	29,949	29,984	29,968	29,960	29,956	29,956	29,941	29,944	29,941	29,962	29,962	29,962	29,962	29,962	29,962	29,962	29,962	29,962	29,962	29,962	29,941	29,962	29,962		0,002	29,962
4	29,944	29,951	29,955	29,955	29,947	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941		0,002	29,941
5	29,932	29,927	29,955	29,954	29,947	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941		0,002	29,941
6	29,947	29,941	29,955	29,954	29,947	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941		0,002	29,941
7	29,947	29,941	29,955	29,954	29,947	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941		0,002	29,941
8	29,932	29,927	29,955	29,954	29,947	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941		0,002	29,941
9	29,932	29,927	29,955	29,954	29,947	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941		0,002	29,941
10	29,932	29,927	29,955	29,954	29,947	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941		0,002	29,941
11	29,932	29,927	29,955	29,954	29,947	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941		0,002	29,941
12	29,932	29,927	29,955	29,954	29,947	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941		0,002	29,941
13	29,932	29,927	29,955	29,954	29,947	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941		0,002	29,941
14	29,932	29,927	29,955	29,954	29,947	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941		0,002	29,941
15	29,932	29,927	29,955	29,954	29,947	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941		0,002	29,941
16	29,932	29,927	29,955	29,954	29,947	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941		0,002	29,941
17	29,932	29,927	29,955	29,954	29,947	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941		0,002	29,941
18	29,932	29,927	29,955	29,954	29,947	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941		0,002	29,941
19	29,932	29,927	29,955	29,954	29,947	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941		0,002	29,941
20	29,932	29,927	29,955	29,954	29,947	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941		0,002	29,941
21	29,932	29,927	29,955	29,954	29,947	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941		0,002	29,941
22	29,932	29,927	29,955	29,954	29,947	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941		0,002	29,941
23	29,932	29,927	29,955	29,954	29,947	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941		0,002	29,941
24	29,932	29,927	29,955	29,954	29,947	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941		0,002	29,941
25	29,932	29,927	29,955	29,954	29,947	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941		0,002	29,941
26	29,932	29,927	29,955	29,954	29,947	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941		0,002	29,941
27	29,932	29,927	29,955	29,954	29,947	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941		0,002	29,941
28	29,932	29,927	29,955	29,954	29,947	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941		0,002	29,941
29	29,932	29,927	29,955	29,954	29,947	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941		0,002	29,941
30	29,932	29,927	29,955	29,954	29,947	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941		0,002	29,941
31	29,932	29,927	29,955	29,954	29,947	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941	29,941		0,002	29,941

NOVEMBER.

Day.	1779	1787	1788	1789	1800	1801	1802	1803	1804	1805	1806	1807	1815	1824	1825	1826	1827	1828	1829	1830	1831	Means.	Correction.	Temp.
	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inches.	Inc.°
1	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
2	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
3	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
4	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
5	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
6	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
7	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
8	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
9	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
10	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
11	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
12	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
13	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
14	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
15	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
16	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
17	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
18	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
19	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
20	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
21	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
22	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
23	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
24	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
25	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
26	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
27	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
28	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
29	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000
30	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	0,027	29,000

DECEMBER.

Days.	1776	1797	1798	1799	1800	1801	1802	1803	1804	1805	1806	1807	1823	1824	1825	1826	1827	1828	1829	1830	1831	Means.	Correction.	Tens.
	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inches.	Inc.
1	30,018	30,038	30,116	30,137	30,171	30,110	30,042	30,007	30,146	30,196	30,202	30,226	30,201	30,282	30,202	30,110	30,068	29,825	30,161	30,054	30,161	30,082	0,000	30,082
2	30,142	30,018	30,130	30,190	30,130	30,139	30,114	30,130	30,042		30,140	30,164	30,122	30,172	30,084	30,274	30,122	30,079	30,047	30,179	30,052	30,179	0,000	30,179
3	30,045	30,091	30,139	30,138	30,137	29,997	30,137	30,093	30,103	30,104	30,063	30,042	29,986	30,021	30,000	30,099	30,116	30,024	30,127	30,208	30,127	30,050	0,000	30,050
4	30,013	30,012	30,097	30,130	30,064		30,090	30,000	30,070	30,196	30,097	30,070	30,086	30,062	30,006	30,141	30,100	30,030	30,126	30,156	30,126	30,069	0,000	30,069
5	29,976	29,994		30,130		30,078	30,046	30,061	30,174	30,170	30,096	29,990	30,054	29,970	30,017	30,070	30,030	30,040	30,113	30,096	30,107	30,033	0,000	30,033
6	29,961	29,980	30,002	30,000		29,990	29,997	30,007	30,125	30,220	30,092	30,057	29,970	30,014	29,997	30,122	30,117	30,020	30,067	30,094	30,090	30,051	0,000	30,051
7	29,953	29,950	30,029	30,090	30,029	29,984	29,957	30,004	30,130	30,150	30,090	30,027	29,970	30,050	30,011	30,120	30,122	30,009	30,103	30,113	30,092	30,051	0,000	30,051
8	29,914	29,901	30,002	30,000	30,020	29,960	29,991	30,154	30,127	30,130	30,050	30,004	30,040	30,020	30,000	30,130	30,110	29,980	30,103	30,128	30,090	30,050	0,000	30,050
9	29,953	30,030	30,079	30,079		30,000	30,047	30,147	30,103	30,130	30,000	29,970	30,000	30,040	30,140	30,117	29,970	30,147	30,103	30,132	30,077	0,000	30,077
10	29,960	30,007	30,102	30,032		30,000	30,000	30,110	30,110	30,104	30,030	29,940	30,016	30,074	30,003	30,119	30,000	30,110	30,126	30,020	30,052	0,000	30,052
11	30,033	30,067	30,154	30,097	30,000	30,000	30,000	30,000	30,084	30,174	30,050	29,970	30,000	30,030	30,030	30,139	30,000	30,103	30,103	30,145	30,084	0,000	30,000
12	30,040	30,102	30,102	30,054	30,000	30,000	30,110	30,142	30,102	30,130	30,000		30,000	30,000	30,000	30,114	30,000	30,000	30,000	30,000	30,000	0,000	30,000
13	30,000	30,132	30,111	30,000	30,000	30,000	30,000	30,130	30,072	30,000	30,000		30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,000	30,000
14	30,110	30,114	30,120	30,000	30,000	30,000	30,000	30,000	30,000	30,000		29,970	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,000	30,000
15	30,119	30,132	30,102	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000		30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,000	30,000
16	30,000	30,132		30,111	30,000		30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,000	30,000
17	30,000	30,132	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000		30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,000	30,000
18	30,000	30,000	30,000	30,000	30,000		30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,000	30,000
19	30,000	30,000	30,000	30,000	30,000		30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,000	30,000
20	30,000	30,000	30,000	30,000	30,000		30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,000	30,000
21	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,000	30,000
22	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,000	30,000
23	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,000	30,000
24	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,000	30,000
25	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,000	30,000
26	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,000	30,000
27	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,000	30,000
28	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,000	30,000
29	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,000	30,000
30	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,000	30,000
31	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	0,000	30,000

TABLE V.

Mean Height of the Thermometer for each Day of the Year between 1795 and 1821.

JANUARY.

Day	1796	1797	1798	1799	1800	1801	1802	1803	1804	1805	1806	1807	1813	1814	1815	1816	1817	1818	1819	1820	1821	Apparent Mean.	Correction.	True Mean.
	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
1		76,4	76,9	83,7	78,5			77,2	79,1	80,8	78,5		76,4	75,6	75,9	78,4	78,0	79,1	77,9	80,6	75,1	77,94	2,51	75,43
2		76,2	74,6	76,8		82,0	79,0	77,7	78,7		77,2	76,7	77,2	74,4	75,4	77,5	78,0	81,2	76,9	76,8	74,0	77,30	2,51	74,79
3		76,0	76,9	77,5	79,2	77,9	79,0	75,2	78,0	77,8	77,1	78,5	77,9	76,1	76,1	76,4	78,7	81,2	76,4	78,0	76,2	77,31	2,51	74,80
4		76,2	76,2	78,3	78,5	81,0	76,7	77,8	78,8	77,3	77,3	75,7	76,1	74,4	77,4	76,7	78,1	80,7	75,7	78,0	80,2	77,50	2,51	74,95
5		76,8	76,2	72,3	78,5	80,2	76,0	76,8	76,0	78,3	76,0	77,4	77,0	74,6	75,5	76,2	77,0	80,2	75,8	77,8	78,8	77,13	2,51	74,62
6		77,4	74,5	79,5	78,8	76,9	77,4	77,8	78,8		78,1	77,6	78,8	74,0	76,1	76,1	75,3	78,7	75,5	76,9	76,9	77,23	2,51	74,72
7		76,5	75,0	77,3	78,7	76,2	77,1	77,7	79,0	81,5	78,0	75,9	77,5	74,4	76,2	76,0	77,0	78,5	74,1	76,0	77,7	77,74	2,51	74,23
8			76,0	74,7	76,8	78,2	78,1	76,0	78,2	78,2	77,3	77,2	78,2	75,0	74,6	78,3	77,4	76,1	76,1	76,0	78,0	77,27	2,51	74,76
9		76,9	76,2	75,7	77,8	77,7	77,0	77,3	80,1	78,0	77,1	76,2	77,3	74,4	76,3	75,4	77,2	76,5	74,0	75,1	78,0	77,10	2,51	74,59
10		75,0	75,3	74,4	77,1		78,7	76,1	81,5	76,0	76,0	78,8	77,4	75,3	76,1	76,0	76,0	76,8	75,6	74,6	78,0	77,11	2,51	74,60
11		76,4	74,4	75,1	76,7	77,6	77,4	75,9	82,0	76,0	77,0	80,4	78,4	75,4	75,1	76,3	78,1	78,7	74,6	75,5	78,0	77,18	2,49	75,09
12		75,5	75,6	74,3	80,9	78,0	74,0	75,2	80,0	76,5	71,0	78,2	78,8	74,5	75,2	78,0	78,5	78,2	72,0	75,8	78,7	76,78	2,49	74,49
13		75,9	76,6		78,4	77,5	78,2	78,8	80,7	75,5	74,0	77,7	78,2	75,0	75,7	80,0	78,8	78,0	74,9	75,0	78,3	77,50	2,49	75,07
14		76,0	75,6	74,4	78,2	74,8	78,9	79,2	80,7	76,7	72,1	77,1	76,2	77,2	75,0	78,6	77,0	78,8	76,6	75,9	76,0	76,98	2,51	74,46
15		76,0	78,1	77,3	76,7	75,5	81,8	77,0	82,7	76,7	74,5	78,7	78,0	77,9	76,0	77,6	76,9	78,0	74,3	76,5	80,1	77,21	2,49	75,18
16		77,0	76,0	74,7	80,0	79,0	77,7	79,6	80,9	77,1	78,0	77,2	78,3	77,9	76,0	76,0	77,9	77,7	74,0	77,4	79,0	77,61	2,49	75,54
17		77,4	76,2	76,5	77,8	76,4		79,9	80,9	77,1	78,0	76,5	78,2	75,1	75,7	77,5	77,0	78,7	76,4	76,7	80,4	77,30	2,49	75,27
18		76,7	77,5	78,4		79,5	77,6	78,1	81,0	78,1	77,9		78,0	81,7	75,0	77,0	76,0	80,5	76,4	76,8	80,0	78,25	2,49	76,16
19		78,2	76,1	80,6		79,2	80,0	79,5	80,5	77,1	76,5	78,4	77,1	76,7	76,7	76,9	77,0	80,2	76,1	76,0	80,0	78,00	2,49	76,17
20		78,9	78,8	74,4	78,0	77,4	78,2	79,4	82,0	78,1	75,2	77,6	78,6	77,0	78,0	76,0	77,4	80,0	76,7	76,0	81,4	78,00	2,49	75,91
21		78,5	78,2	78,1		75,7	78,9	79,1	81,4	76,0	77,9	74,1	77,0	78,1	74,1	77,2	76,2	79,5	76,8	76,5	80,0	77,76	1,48	76,22
22		78,8	78,9	78,3	75,9	78,4	76,4	79,2	81,9	76,7	77,2	76,7	77,1	76,7	77,4	78,1	78,0	78,0	77,9	77,8	80,3	78,16	1,48	76,67
23		79,0	78,7	77,8	78,2	82,0	79,4	76,1	82,3	77,8	78,7	78,3	78,0	78,4	77,5	77,4	77,9	79,0	75,8	78,0	81,2	78,73	1,48	77,27
24		78,3	76,8	78,3	77,7	82,0	80,0	75,3	81,8	74,8	78,3	76,1	78,0	76,5	77,8	75,8	78,1	80,0	75,0	78,8	81,2	78,39	1,48	76,91
25		78,0	78,3	77,7	75,0		80,0	78,5	82,0	77,4	78,0		78,1	78,7	76,2	77,2	78,0	82,1	75,7	77,0	81,4	78,60	1,48	77,19
26		76,4	75,2	77,2	78,0	78,0	78,0	79,0	79,9	79,4	77,0	80,0	78,5	78,0	76,2	77,3	78,2	81,2	76,1	77,0	78,7	78,28	1,48	76,75
27		78,1	77,5	77,0	78,5	80,0	79,2	79,5	81,3	80,3	78,4	80,2	79,7	77,6	76,2	77,5	78,2	80,5	75,4	78,0	80,7	78,89	1,48	77,40
28		77,0	78,5	78,4	78,0	77,6	74,8	78,7	82,5	78,2	75,1	77,6	76,9	78,0	76,5	74,5	78,0	80,1	77,7	78,0	80,5	78,0	1,48	76,52
29		84,2	78,9	76,4	78,1	78,0	78,7	76,0	80,7	78,7	78,0	78,6	78,7	81,0	77,0	76,4	77,6	79,1	77,7	78,7	79,8	78,02	1,48	77,14
30		78,0	79,0	76,4	78,3	78,2	76,7	75,3	80,0	78,0	72,8	82,0	78,0	80,0	78,0	77,8	77,7	80,7	77,3	78,2	79,8	78,11	1,48	76,63
31		78,7	79,1	75,1	79,3	74,3		77,0	82,0	78,4	81,1	82,0	81,4	79,7	76,0	78,1	77,5	81,4	74,7	78,7	79,1	78,60	1,48	77,38

FEBRUARY.

MARCH.

Day.	1796	1797	1798	1799	1800	1801	1802	1803	1804	1805	1806	1807	1813	1814	1815	1816	1817	1818	1819	1820	1821	Mean.	Correction.	True.
	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
1	79,0	80,4		80,6	79,1		79,7	79,8	81,9	80,0	82,6	80,1	81,7	81,6	82,4	80,6	81,7	82,2	82,7	81,7	83,2	81,2	1,27	79,93
2	78,8	80,9		80,7		82,0	84,2	82,7	80,5	81,8	81,2	79,2	79,1	80,1	81,9	80,4	80,2	82,9	82,3	81,5	83,1	81,31	1,27	80,04
3	78,7	82,3			81,1	80,5	80,9	84,8	82,0	80,5	80,9	81,4	80,9	80,1	82,2	80,8	81,9	82,2	80,3	80,5	82,7	81,82	1,27	80,55
4	79,0	82,4		80,8	82,0	80,0	84,0	80,0	81,0	81,1	81,2	81,7	80,0	80,0	82,6	80,0	81,8	84,2	80,8	80,3	80,0	81,73	1,27	80,46
5	82,5	82,0		80,0	81,0	82,0	84,5	80,0	79,5	87,2	81,8	80,4	80,0		81,3	79,2	81,4	82,9	80,5	82,1	80,7	82,01	1,27	81,84
6	80,2	81,9	80,0	82,8	80,1	80,3	84,4	80,5	79,5	81,4	81,5	80,5	82,7	81,1	82,4	81,1	81,8	82,9	81,5	82,1	82,7	82,03	1,27	80,80
7	80,3	81,7	79,7	82,8	80,4	80,4	80,7	80,4	74,9	80,2	81,8	80,3	82,7	80,4	80,0	80,0	81,6	82,1	80,9	82,9	81,8	81,8	1,27	80,53
8	81,0	81,4	80,5	82,0	80,5		84,0	80,0	79,9	87,0	82,0		80,5	81,6	82,8	80,0	81,3	82,3	80,6	80,3	82,7	81,5	1,27	80,23
9	79,5	84,1	80,1	82,0		79,2	80,0	82,4	80,5	84,2	84,0	80,8	80,4	82,0	80,2	80,0	82,1	82,4	81,1	83,4	83,3	82,14	1,27	80,87
10	81,0	81,0	81,2	80,2	82,0		80,0	80,1	80,2	80,0	80,4	81,0	80,4	81,3	81,0	79,4	79,8	82,1	81,8	82,3	80,0	81,02	1,27	80,55
11	81,4	81,6	81,3	80,9	81,5	82,7	80,4	80,7	81,2	81,0	81,6	80,7	81,0	82,0	80,3	79,7	80,4	80,7	82,7	80,9	80,7	82,05	1,00	80,90
12	81,2	82,1	80,5	81,0	81,4	85,4	84,5	80,3	81,5	81,2	80,2	80,0	82,2	80,5	80,2	79,8	81,4	79,7	82,0	81,0	81,0	82,25	1,00	80,67
13	81,2	81,4	81,7	80,5	81,5	82,0	80,0	80,0	81,5	82,5	81,4	81,0	80,7	82,3	80,0	80,1	81,0	79,9	81,8	80,4	84,2	82,20	1,00	80,60
14	80,8	82,0	81,8	82,5	84,4	80,5		81,8	79,6	79,9	80,4	82,7	80,0	80,6	81,9	80,7	81,9	80,5	81,2	80,4	84,4	82,14	1,00	80,48
15	79,9	81,2	80,5	81,7	81,8	80,8	80,8	80,3	87,7	80,0	82,1	81,1	84,0	81,5	82,5	80,0	81,7	79,8	81,5	80,4	84,0	82,05	1,00	81,29
16	80,3	80,1	81,4	81,1		87,5	80,1	80,6	80,4	84,2	81,2	79,7	80,8	81,5	80,0	79,8	81,8	81,0	82,0	80,8	80,4	80,40	1,00	81,89
17	80,6	80,0	79,3	81,0	87,7	80,2	80,2	80,5	84,0	80,0	80,0	79,0	80,1	80,1	80,1	80,3	80,0	80,0	82,0	80,8	84,8	82,50	1,00	80,84
18	81,2	80,0	80,5	81,0	80,0	80,8	80,7	84,2	80,4	80,0	80,0	80,7	80,1	84,2	80,0	80,8	82,0	80,6	82,8	84,2	84,1	82,80	1,00	81,11
19	81,0	80,5	80,0	82,4	80,0		80,2	80,6	84,0	80,3	81,2	80,0	84,0	84,2	80,7	80,5	81,8	81,3	80,1	80,1	84,7	82,00	1,00	81,34
20	80,0	82,1	80,0	80,0	81,0	87,0	87,0	80,0	80,7	80,0	79,5	80,8	80,0	84,0	80,2	77,0	82,5	82,2	80,7	80,2	84,8	80,1	1,00	81,54
21	81,2	80,0	80,0	80,7	80,0			80,0	87,7	84,6	84,0	80,8	80,0	84,5	80,5	80,4	82,4	82,1	80,0	80,0	80,3	80,8	1,83	81,47
22	81,4	80,1	81,7	81,7	80,1	80,6	80,5	80,8	80,4	80,5	80,0	81,2	80,8	80,4	80,2	80,3	81,2	82,8	80,0	80,5	84,6	80,08	1,83	81,83
23	81,4	80,2	80,0	80,0	80,0	87,5	80,0	80,0	80,7	80,5	80,8	81,0	80,2	84,6	80,0	81,4	80,2	80,0	80,3	80,7	84,5	80,05	1,83	81,83
24	80,4	80,0	80,8	80,0	80,0	84,8	80,3	80,0	84,0	80,0	80,0	81,0	80,0	84,5	80,0	80,2	80,0	80,7	80,5	80,0	80,8	80,40	1,83	81,07
25	80,1	84,4	80,0	84,7	80,1	80,5	80,0	80,1	80,0	80,5	79,5	80,0	80,5	84,7	84,0	80,8	80,7	80,0	84,2	84,1	80,2	84,18	1,83	82,33
26	84,0	80,2	80,0	80,5	80,3	87,7	80,0	84,0	80,0	80,7	80,3	80,0	80,5	84,0	84,4	81,4	82,4	80,3	84,7	80,0	84,9	84,50	1,83	82,67
27	80,6	80,0	80,5	80,0	80,0	87,5	87,7	80,1	80,2	80,0	80,0	87,2	80,4	84,5	84,2	80,3	80,2	82,1	84,9	84,5	80,7	80,6	1,83	80,77
28	80,7	80,0	82,0	80,0	80,0			84,7	80,0	80,0	79,1	80,0	80,0	80,5	82,8	80,0	80,0	80,0	80,8	80,1	80,3	80,2	1,83	81,37
29	81,2	80,0	87,4	80,7	80,1	80,0	80,0	80,0	80,8	80,5	79,5	81,0	80,0	82,4	80,2	80,8	84,7	84,0	80,0	78,8	80,0	80,4	1,83	81,67
30	80,0	80,4	80,1	84,7	80,2	87,7	80,0	80,0	87,0	84,1	80,0	80,2	80,0	80,4	80,4	80,7	80,0	84,0	80,0	75,0	84,5	84,1	1,83	82,27
31	81,1	84,0	80,5		80,0	80,0	80,5	80,2	80,0	87,8	77,9	80,0	80,0	80,0	80,0	82,2	80,0	80,0	80,0	82,0	80,2	84,27	1,83	82,44

APRIL.

| Days. | 1702 | 1707 | 1708 | 1709 | 1710 | 1711 | 1712 | 1713 | 1714 | 1715 | 1716 | 1717 | 1718 | 1719 | 1720 | 1721 | 1722 | 1723 | 1724 | 1725 | 1726 | 1727 | 1728 | 1729 | 1730 | 1731 | 1732 | 1733 | 1734 | 1735 | 1736 | 1737 | 1738 | 1739 | 1740 | 1741 | 1742 | 1743 | 1744 | 1745 | 1746 | 1747 | 1748 | 1749 | 1750 | 1751 | 1752 | 1753 | 1754 | 1755 | 1756 | 1757 | 1758 | 1759 | 1760 | 1761 | 1762 | 1763 | 1764 | 1765 | 1766 | 1767 | 1768 | 1769 | 1770 | 1771 | 1772 | 1773 | 1774 | 1775 | 1776 | 1777 | 1778 | 1779 | 1780 | 1781 | 1782 | 1783 | 1784 | 1785 | 1786 | 1787 | 1788 | 1789 | 1790 | 1791 | 1792 | 1793 | 1794 | 1795 | 1796 | 1797 | 1798 | 1799 | 1800 | 1801 | 1802 | 1803 | 1804 | 1805 | 1806 | 1807 | 1808 | 1809 | 1810 | 1811 | 1812 | 1813 | 1814 | 1815 | 1816 | 1817 | 1818 | 1819 | 1820 | 1821 | Mean. | Correction. | True. |
|---|---|---

MAY.

Day.	1796	1797	1798	1799	1800	1801	1802	1803	1804	1805	1806	1807	1813	1814	1815	1816	1817	1818	1819	1820	1821	Mean.	Correction.	True.
	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
1	86,5	88,1	88,0	85,5	86,2		84,2	89,9	89,2	88,5	90,8	85,8	86,8	87,6	86,8	85,4	86,2	85,4	85,4	87,9	86,5	86,83	1,05	85,18
2	84,0	89,0	88,8	86,4	86,5			88,3	88,8	90,0	91,7	85,2	86,4	86,7	86,0	86,0	86,0	84,0	86,0	87,6	86,2	86,77	1,05	85,12
3	83,8	89,5	87,8	87,1	86,0			89,3	89,3	87,8	90,4	86,0	85,5	86,7	86,4	86,0	85,0	85,5	86,0	87,5	86,0	87,22	1,05	85,02
4	83,8	87,0	87,4	86,2	86,0		86,8	86,1	87,8	87,4	87,7	86,5	87,0	87,8	86,2	86,0	84,8	84,8	87,8	88,1	87,0	86,74	1,05	85,09
5	87,2	87,7	86,1		86,0			88,6	88,5		88,7	86,5	88,3	87,2	86,2	86,8	85,0	86,0	87,1	88,1	87,5	87,55	1,05	85,90
6	86,0	87,2	86,6	86,7	87,0		85,0	91,4	89,4	87,8	84,2	87,0	88,0	88,2	86,2	86,7	86,0	86,5	87,0	89,0	86,8	87,77	1,05	86,12
7	85,0	89,3	86,5	86,2	86,1		86,0	88,6	87,4		87,8	86,0	87,3	86,0	86,3	86,3	86,4	85,2	87,7	91,2	86,0	88,3	1,05	86,55
8	85,5	88,0	86,1	86,7	86,0		87,7	86,5	86,0	88,2	86,0	86,3	86,4	86,4	86,2	86,5	85,2	86,0	87,1	88,2	86,4	87,07	1,05	86,22
9	87,5	88,1	86,0	88,1	86,0			87,1	86,0	88,4	87,5	86,4	86,4	86,7	86,3	86,5	86,8	86,0	87,3	86,2	86,8	87,43	1,05	86,78
10	86,8	87,3	86,2	86,4	86,0		86,3	86,4	86,8	88,1	86,0	87,8	86,4	86,2	86,2	86,2	86,0	86,0	86,2	86,7	86,0	86,18	1,05	86,51
11	86,0	88,3	86,5	88,8	86,0		87,8	87,8	86,4	87,8	87,8	88,2	86,1	86,5	86,7	86,0	86,0	87,0	86,0	86,0	86,0	86,26	1,05	86,37
12	87,0	88,2	86,2		86,3		87,8	86,2	86,8	86,4	86,0	86,4	86,0	86,2	86,3	86,4	86,2	87,4	86,0	86,3	87,7	87,07	1,05	86,08
13	86,7	88,4		86,6	87,7			87,8	86,5	86,5	87,0	86,7	86,0	86,0	86,0	86,0	86,0	86,5	86,3	86,2	86,4	86,41	1,05	87,22
14	87,8	86,8	87,8	87,1	86,0		86,8	85,1	86,0	86,5	87,0	86,8	86,4	86,1	86,1	86,0	86,5	86,0	86,0	86,2	86,7	86,14	1,05	87,35
15	86,8	88,0	86,6	86,0	86,8		86,3	87,2	86,8	86,6	86,8	86,7	86,0	86,5	86,4	86,0	86,0	86,0	87,8	86,0	86,0	86,32	1,05	87,43
16	86,3	88,8	86,5	86,3	86,5			86,3	86,0	86,7	86,5	86,2	86,4	87,0	86,3	86,0	86,0	86,1	86,7	86,0	86,1	86,54	1,05	86,55
17	86,0	88,6	86,5	86,5	87,0		86,8	86,2	86,4	86,2	86,0	86,2	86,0	86,2	86,0	86,0	86,7	86,0	86,0	87,3	86,2	86,24	1,05	86,82
18	87,8	88,6	87,8	86,0	87,0		87,4	87,4	86,4	86,1	86,1	87,1	87,4	86,0	86,0	86,0	86,5	86,0	86,4	86,5	86,8	86,76	1,05	86,87
19	86,0	89,4	86,4	86,0	86,0		87,0	86,7	86,1	86,7	86,5	87,5	86,0	86,5	86,1	86,0	86,0	86,5	86,0	86,0	86,0	86,02	1,05	87,45
20	87,4	89,8		86,0	86,7		86,8	86,4	86,6	87,0	86,8	86,4	86,0	86,3	86,7	86,5	86,0	86,0	86,0	86,7	86,0	86,88	1,05	86,92
21	86,0	88,4		86,4	86,7		86,9	87,4	86,8	86,0	86,8	86,3	86,0	86,7	86,0	86,0	87,3	86,3	87,8	87,5	86,7	86,11	1,05	87,03
22	86,1	88,0	86,0	86,2			87,5	86,6	86,4	87,0	86,4	86,0	86,7	86,4	86,8	87,3	87,3	86,5	87,5	87,8	86,6	86,02	1,05	87,34
23	87,8	88,0	86,0	86,7	86,1		86,7	86,2	86,2	86,0	86,8	86,7	86,0	86,0	86,0	87,8	86,1	86,5	87,8	86,0	87,1	86,00	1,05	87,22
24	86,0	87,0	86,7	87,2	86,0		86,5	87,8	86,0	86,0	87,8	86,0	86,0	86,2	86,2	86,5	86,0	86,7	87,8	86,0	86,0	86,27	1,05	86,00
25	86,7	87,7	86,8	86,2	86,5		86,5	87,5	86,0	86,0	86,7	86,7	86,0	86,8	86,0	86,5	86,0	86,0	86,0	86,0	86,0	86,24	1,05	87,05
26	86,1	86,0	86,7	86,2	86,4		86,8	86,1	86,0	86,5	86,0	86,5	86,0	86,6	86,0	86,2	86,0	86,2	86,2	86,8	86,0	86,06	1,05	87,78
27	86,5	86,0	86,0	86,1	86,2		86,0	86,5	86,0	86,0	86,5	86,1	86,7	86,0	86,7	86,0	86,7	86,4	86,1	86,4	86,0	86,00	1,05	88,32
28	86,0	86,0	86,0	86,0	86,0		86,0	86,5	86,0	86,2	87,0	86,7	86,0	86,1	86,7	86,0	86,8	86,0	86,1	87,4	86,0	86,20	1,05	88,51
29	86,0	86,0	87,8	86,5	86,0		86,7	86,5	86,4	86,4	87,5	86,2	87,5	86,0	86,0	86,0	86,0	86,7	86,0	87,5	86,4	86,05	1,05	88,02
30	86,1	86,5	87,0	86,4	86,8		87,0	87,0	86,4	86,8	86,0	87,8	86,0	86,5	86,4	87,0	86,5	86,7	86,0	86,0	86,0	86,07	1,05	87,40
31	86,7	86,5	86,2	86,0	86,0		86,5	86,0	86,0	86,8	87,8	86,7	87,4	86,8	86,0	86,7	86,7	86,7	86,0	86,2	86,0	86,79	1,05	87,51

JULY.

Day.	1790	1792	1798	1799	1800	1801	1802	1803	1804	1805	1806	1807	1813	1814	1815	1816	1817	1818	1819	1820	1821	Means.	Correction.	True.
	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
1	80,9	85,9		80,6	84,5	80,2	84,6	80,7	81,6	81,1	80,2	81,3	83,0	84,9	83,7	80,3	89,8	83,1	82,5	84,1	80,0	87,90	0,99	86,91
2	85,0	86,1	80,0	81,7	81,6	81,2	80,1	80,7	80,0	84,0	84,4	81,5	84,0	81,0	83,3	80,5	88,9	81,0	87,0	83,8	80,9	87,50	0,99	86,57
3	80,2	81,4	80,4	80,3		80,2	80,6	80,1	80,1	84,1	80,8	80,5	83,7	82,1	84,0	80,2	86,9	80,0	86,5	80,1	80,4	87,80	0,99	86,89
4	85,0	87,7	89,1	82,3	81,2	85,1		80,4	80,0	84,2	80,6	84,2	85,8	80,4	87,0	80,9	87,0	80,0	84,8	80,4	81,6	87,57	0,99	86,58
5	80,1	80,8	81,2	83,1		80,0	80,0	87,4	81,0	84,1	87,3	80,8	85,7	80,9	80,0	80,0	87,8	80,0	80,5	87,8	81,0	87,74	0,99	86,75
6	87,5	80,4	80,2	80,8	80,0	80,1	79,7	80,9	80,1	80,4	87,2	80,9	85,7	80,9	80,4	87,3	84,2	85,2	83,8	87,5	80,1	87,84	0,99	86,85
7	87,7	84,9	80,4	80,8	87,5	84,8	80,6	80,1	80,8	84,8	80,7	80,9	80,3	80,7	80,1	87,3	80,5	87,8	83,5	80,9	80,8	87,80	0,99	86,81
8	85,1	80,4	84,3	80,3	80,5	85,0	80,0	80,0	80,1	87,0	85,0	80,4	80,3	80,3	85,1	87,0	80,4	85,4	80,4	80,4	80,7	87,69	0,99	86,70
9	84,7	80,0	87,0	87,0	85,3	84,5	80,3	80,2	85,1	85,3	80,3	80,9	80,9	81,7	85,9	85,5	80,2	85,4	80,3	87,0	80,2	87,36	0,99	85,37
10	83,5	80,0	80,0	80,5	85,1	84,9	87,8	81,0	85,5	84,1	80,0	80,2	80,5	80,0	85,3	80,6	80,3	84,0	85,7	87,0	80,0	80,85	0,99	85,86
11	85,1	85,8	80,7	87,3	85,0	84,7	80,5	80,9	87,1	84,1	85,0	80,2	80,0	80,5	85,8	84,1	80,9	84,2	85,0	80,7	80,1	80,07	1,58	85,11
12	80,1	85,5	80,8	85,5	84,0	87,2	80,5	80,0	80,5	84,8	87,0	87,1	81,4	81,5	85,4	85,2	87,2	84,0	80,1	80,8	80,4	87,01	1,58	85,52
13	83,1	80,9	80,0	80,0	87,5	83,3	80,8	80,9	80,9	80,2	81,8	80,7	81,1	81,7	84,0	85,5	80,4	80,0	87,0	87,0	80,0	87,33	1,58	85,89
14	84,5	88,1	88,1		80,7	83,3	80,7	87,3	81,0	80,0	80,0	80,0	80,0	80,1	85,1	83,0	80,5	84,1	87,8	85,4	87,4	87,10	1,58	85,59
15	79,5	80,0	80,9	83,0	85,5	83,0	80,5	85,0	81,1	80,0	80,8	87,0	80,0	87,3	84,4	83,0	80,7	87,1	87,8	85,8	87,5	80,5	1,58	84,09
16	81,3	81,5	80,6	83,1	87,4	80,7	80,2	85,4	80,7	87,5	85,0	81,0	80,8	80,7	81,7	80,4	87,8	84,6	87,0	80,0	85,4	80,5	1,58	84,09
17	81,0	80,2	80,0	85,5	83,2	84,1	85,0	85,7	80,2	87,0	80,8	80,2	87,2	85,1	82,2	85,3	80,0	81,5	80,5	84,1	87,2	80,01	1,58	84,73
18	80,3	80,0	87,3	85,8	83,0	80,8	80,0	85,8	81,4	87,1	80,2	80,8	80,0	87,5	84,0	84,3	80,0	81,3	80,0	84,1	80,8	80,02	1,58	83,11
19	79,0	80,2	80,8	87,0	82,6	85,3	80,3	85,7	80,0	80,6	87,8	84,1	80,8	80,4	80,0	80,2	80,9	82,3	80,8	85,3	85,9	80,48	1,58	84,97
20	81,3	87,3	87,0	80,0	85,2	85,0	80,3	85,2	80,0	81,5	80,3	84,1	80,9	87,0	85,7	80,0	80,4	82,2	80,3	81,0	80,2	80,47	1,58	84,00
21	84,4	84,3	80,5	80,0	84,2	85,2	80,7	85,1	80,0	84,5	87,3	84,3	80,1	84,8	85,9	82,4	82,2	84,1	87,8	84,5	87,1	80,30	1,58	84,61
22	84,0	84,9	80,9	80,2	81,3	85,4	87,5	85,0		84,1	87,4	80,0	80,4	80,6	84,1	80,9	81,8	83,0	80,6	81,0	87,8	80,08	1,58	84,17
23	85,4	80,4	80,0	80,5	84,0	80,0	84,7	83,0	81,1	84,2	80,7	80,3	80,4	80,1	80,7	80,2	80,3	84,7	80,7	80,9		80,03	1,58	84,71
24	80,8	80,8	80,8	80,0	80,1	80,1	80,1	80,8	80,2	80,5	80,4	80,7	80,8	80,4	83,3	80,8	81,1	79,8	80,3	80,0	80,0	80,80	1,58	85,24
25	80,0	80,8	85,5	87,9	80,0	84,5	80,1	80,8	80,0	85,0	80,0	84,0	80,0	80,7	82,0	80,0	80,5	80,0	87,1	84,0	80,8	80,18	1,58	84,62
26	84,0	85,1	85,0	80,3		84,0	80,2	80,2	80,7	85,0	84,0	84,4	80,0	80,0	85,0	80,0	80,0	84,0	80,0	85,7	80,9	80,02	1,58	85,06
27	85,5	87,4	84,8	80,5	80,5	81,6	80,1	81,0	82,0	87,8	81,9	80,7	85,5	87,1	84,4	80,4	80,0	84,8	80,6	83,5	87,4	80,02	1,58	85,96
28	80,0	80,0	80,0	87,2	87,3	81,3	80,4	80,2	81,5	85,5	80,0	80,5	85,0	85,4	80,0	82,4	80,0	85,8	87,0	81,1	80,4	80,50	1,58	84,94
29	80,3		80,7	80,3	85,5	82,1	81,3	80,2	87,2	85,3	80,0	80,0	84,0	85,3	80,1	82,5	87,1	80,3	80,0	81,5	80,7	80,61	1,58	85,07
30	83,0		80,1	87,8	82,8	84,7	80,1	81,0	80,7	87,1	87,6	80,9	84,1	84,7	80,0	79,0	87,0	80,3	80,5	82,5	87,1	80,33	1,58	84,75
31	80,1	84,2	80,0	85,3	85,7	80,7	80,2	80,0	85,7	80,4	80,5	85,0	82,9	84,8	84,0	81,4	87,8	80,2	80,5	83,0	87,9	85,23	1,58	84,17

AUGUST.

Day.	1701	1727	1739	1751	1763	1775	1802	1813	1824	1835	1840	1867	1832	1844	1845	1856	1867	1915	1939	1928	1932	Means.	Correction.	True.
1	30,6	30,12	30,6	30,1	30,3	30,10	30,7	30,6	30,9	30,4	30,1	30,4	30,9	30,4	30,7	30,0	30,1	30,0	30,4	30,8	30,2	30,28	1,15	30,13
2	30,1	30,0	30,0	30,7	30,0	30,7	30,1	30,1	30,1	30,1	30,0	30,1	30,6	30,3	30,3	30,1	30,1	30,0	30,1	30,0	30,1	30,10	1,15	30,01
3	30,0	30,4	30,3	30,0	29,7	30,0	30,0	29,9	30,0	29,8	29,9	30,0	30,0	30,0	30,0	30,1	30,1	30,1	30,0	30,1	30,0	30,05	1,14	30,00
4	30,1	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	29,9	30,0	30,0	30,0	30,0	30,0	30,1	30,0	30,0	30,0	30,0	30,00	1,14	29,85
5	30,0	30,0	30,1	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,00	1,13	29,87
6	30,0	30,1	30,0	30,0	30,0	30,0	30,0	30,1	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,00	1,13	29,87
7	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,00	1,13	29,87
8	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,00	1,13	29,87
9	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,00	1,13	29,87
10	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,00	1,13	29,87
11	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,00	1,13	29,87
12	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,00	1,13	29,87
13	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,00	1,13	29,87
14	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,00	1,13	29,87
15	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,00	1,13	29,87
16	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,00	1,13	29,87
17	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,00	1,13	29,87
18	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,00	1,13	29,87
19	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,00	1,13	29,87
20	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,00	1,13	29,87
21	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,00	1,13	29,87
22	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,00	1,13	29,87
23	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,00	1,13	29,87
24	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,00	1,13	29,87
25	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,00	1,13	29,87
26	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,00	1,13	29,87
27	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,00	1,13	29,87
28	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,00	1,13	29,87
29	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,00	1,13	29,87
30	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,00	1,13	29,87
31	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,0	30,00	1,13	29,87

APPENDIX.

OCTOBER.

Day.	1791	1797	1798	1799	1800	1801	1802	1803	1804	1805	1806	1807	1823	1824	1825	1826	1827	1828	1829	1830	1831	Mean.	Correction.	Temp.
1	44,5		64,9	65,0	67,0	61,4		67,0	67,0	63,3	62,1	60,5	67,8	62,8	63,6	63,5	64,9	63,5	63,8	69,5	63,6	63,18	3,42	63,24
2	61,6	64,3	65,0	63,5	66,0	65,4		67,0	65,3	65,5	66,1	66,7	69,0	64,8	64,0	64,0	64,1	65,0	66,0	69,5	65,5	65,09	3,43	65,13
3	65,5	64,9	64,5	67,0	69,3	70,0	65,0	69,1	64,8	65,9	65,0	65,8	67,8	64,9	64,0	65,9	65,1	64,5	66,7	69,5	65,3	65,97	3,45	66,42
4	64,8	64,9	66,6	67,8	66,0	66,0	66,7	66,4	66,7	62,9	64,7	65,0	66,0	64,9	65,0	64,1	65,4	65,8	67,5	69,5	65,0	65,03	3,41	65,38
5	63,4	65,0	64,3	66,3	66,0	66,0	66,7	69,0	66,7	62,7	64,0	65,0	66,5	66,1	64,1	65,0	64,9	64,5	66,5	69,5	66,1	65,59	3,42	65,59
6	66,3	64,0	62,3	66,0	66,0	63,4	65,3	65,0	65,0	62,4	62,4	63,8	66,5	66,1	63,1	63,4	64,9	64,5	66,0	69,5	64,0	65,09	3,43	65,00
7	64,0	64,0	65,7	66,0	64,0	64,0	67,3	66,0	66,7	64,3	64,3	63,8	66,0	66,1	65,0	64,7	62,3	64,5	67,2	69,5	64,3	65,63	3,43	65,06
8	63,3	65,0	64,0	64,0	64,0	64,0	67,3	66,4	66,7	65,3	61,6	63,4	66,5	66,1	64,5	64,7	64,7	64,5	66,5	69,5	64,8	65,03	3,41	65,10
9	63,6	65,0	63,3	64,3	64,0	64,0	70,0	66,4	66,7	66,0	64,0	64,0	66,7	66,1	66,7	64,7	64,7	64,5	66,5	69,5	64,8	65,59	3,41	65,59
10	66,6	66,7	64,7	64,0	64,0	64,0	66,0	66,0	66,7	66,0	64,0	64,0	66,7	66,1	66,7	64,7	64,7	64,5	66,5	69,5	64,8	65,59	3,43	65,73
11	66,0	64,7	64,0	64,0	64,0	64,0	66,0	66,4	66,7	64,3	64,3	64,0	66,5	66,1	64,5	64,7	64,7	64,5	66,5	69,5	64,8	65,03	3,43	65,06
12	66,0	64,7	67,8	66,0	64,0	64,0	66,0	66,4	66,7	64,3	64,3	64,0	66,5	66,1	64,5	64,7	64,7	64,5	66,5	69,5	64,8	65,03	3,43	65,06
13	66,0	64,7	64,0	66,0	64,0	64,0	66,0	66,4	66,7	64,3	64,3	64,0	66,5	66,1	64,5	64,7	64,7	64,5	66,5	69,5	64,8	65,03	3,43	65,06
14	66,0	64,7	67,8	66,0	64,0	64,0	66,0	66,4	66,7	64,3	64,3	64,0	66,5	66,1	64,5	64,7	64,7	64,5	66,5	69,5	64,8	65,03	3,43	65,06
15	66,0	64,7	64,0	66,0	64,0	64,0	66,0	66,4	66,7	64,3	64,3	64,0	66,5	66,1	64,5	64,7	64,7	64,5	66,5	69,5	64,8	65,03	3,43	65,06
16	66,0	64,7	67,8	66,0	64,0	64,0	66,0	66,4	66,7	64,3	64,3	64,0	66,5	66,1	64,5	64,7	64,7	64,5	66,5	69,5	64,8	65,03	3,43	65,06
17	66,0	64,7	64,0	66,0	64,0	64,0	66,0	66,4	66,7	64,3	64,3	64,0	66,5	66,1	64,5	64,7	64,7	64,5	66,5	69,5	64,8	65,03	3,43	65,06
18	66,0	64,7	67,8	66,0	64,0	64,0	66,0	66,4	66,7	64,3	64,3	64,0	66,5	66,1	64,5	64,7	64,7	64,5	66,5	69,5	64,8	65,03	3,43	65,06
19	66,0	64,7	64,0	66,0	64,0	64,0	66,0	66,4	66,7	64,3	64,3	64,0	66,5	66,1	64,5	64,7	64,7	64,5	66,5	69,5	64,8	65,03	3,43	65,06
20	66,0	64,7	67,8	66,0	64,0	64,0	66,0	66,4	66,7	64,3	64,3	64,0	66,5	66,1	64,5	64,7	64,7	64,5	66,5	69,5	64,8	65,03	3,43	65,06
21	66,0	64,7	64,0	66,0	64,0	64,0	66,0	66,4	66,7	64,3	64,3	64,0	66,5	66,1	64,5	64,7	64,7	64,5	66,5	69,5	64,8	65,03	3,43	65,06
22	66,0	64,7	67,8	66,0	64,0	64,0	66,0	66,4	66,7	64,3	64,3	64,0	66,5	66,1	64,5	64,7	64,7	64,5	66,5	69,5	64,8	65,03	3,43	65,06
23	66,0	64,7	64,0	66,0	64,0	64,0	66,0	66,4	66,7	64,3	64,3	64,0	66,5	66,1	64,5	64,7	64,7	64,5	66,5	69,5	64,8	65,03	3,43	65,06
24	66,0	64,7	67,8	66,0	64,0	64,0	66,0	66,4	66,7	64,3	64,3	64,0	66,5	66,1	64,5	64,7	64,7	64,5	66,5	69,5	64,8	65,03	3,43	65,06
25	66,0	64,7	64,0	66,0	64,0	64,0	66,0	66,4	66,7	64,3	64,3	64,0	66,5	66,1	64,5	64,7	64,7	64,5	66,5	69,5	64,8	65,03	3,43	65,06
26	66,0	64,7	67,8	66,0	64,0	64,0	66,0	66,4	66,7	64,3	64,3	64,0	66,5	66,1	64,5	64,7	64,7	64,5	66,5	69,5	64,8	65,03	3,43	65,06
27	66,0	64,7	64,0	66,0	64,0	64,0	66,0	66,4	66,7	64,3	64,3	64,0	66,5	66,1	64,5	64,7	64,7	64,5	66,5	69,5	64,8	65,03	3,43	65,06
28	66,0	64,7	67,8	66,0	64,0	64,0	66,0	66,4	66,7	64,3	64,3	64,0	66,5	66,1	64,5	64,7	64,7	64,5	66,5	69,5	64,8	65,03	3,43	65,06
29	66,0	64,7	64,0	66,0	64,0	64,0	66,0	66,4	66,7	64,3	64,3	64,0	66,5	66,1	64,5	64,7	64,7	64,5	66,5	69,5	64,8	65,03	3,43	65,06
30	66,0	64,7	67,8	66,0	64,0	64,0	66,0	66,4	66,7	64,3	64,3	64,0	66,5	66,1	64,5	64,7	64,7	64,5	66,5	69,5	64,8	65,03	3,43	65,06
31	66,0	64,7	64,0	66,0	64,0	64,0	66,0	66,4	66,7	64,3	64,3	64,0	66,5	66,1	64,5	64,7	64,7	64,5	66,5	69,5	64,8	65,03	3,43	65,06

NOVEMBER.

Day.	1796	1797	1798	1799	1800	1801	1802	1803	1804	1805	1806	1807	1813	1814	1815	1816	1817	1818	1819	1820	1821	Mean.	Correction.	Time.
	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
1	84,0	80,5	84,5	79,1	80,6	80,4	84,0	80,9	77,3	84,1	83,8		83,9	83,1	81,2	81,0	83,5	82,9	80,5	82,7	80,1	82,25	1,49	80,76
2	84,7	78,8	79,7	79,4	84,0	84,1	84,7	80,7	79,8	82,1	81,5	77,1	79,9	83,5	80,4	80,8	83,6	82,7	83,2	83,3	81,1	81,23	1,49	79,74
3	83,0	77,8	79,8	79,4	84,0	84,0	84,9	81,8	81,7	84,1	84,9	79,1	79,9	83,9	80,6	78,8	83,6	82,9	82,1	83,1	80,9	81,42	1,49	79,08
4	80,3	81,7	74,7	84,5	85,0	85,0	81,9	79,8	83,1	82,9	82,8	82,6	79,1	84,9	83,1	79,8	82,5	80,9	82,0	84,1	82,0	81,82	1,49	80,33
5	79,0	80,1	79,1	80,9	85,9	84,0	80,8	82,0	82,1	80,0	84,1	82,0	79,2	84,0	82,9	79,1	84,1	81,4	81,3	84,0	81,8	81,72	1,49	80,23
6	80,0	81,2	79,7			80,7	80,5	81,3	80,9	78,5	84,9	78,0	79,7	84,1	83,9	80,9	83,4	81,5	78,8	82,7	81,8	81,22	1,49	79,74
7	79,7	81,7		80,7		80,8	80,9	84,5	84,7	78,1	85,7	78,0	79,4	84,9	83,2	80,2	83,9	81,0	80,1	81,9	81,8	81,64	1,49	80,15
8	79,4	80,7	77,7	79,8		80,0	81,4	80,0	80,2	77,0	85,3	78,0	82,9	80,7	81,4	80,9	82,4	81,5	79,0	80,0	81,5	81,00	1,49	79,51
9	78,1	81,7	79,7	79,8		79,1	77,9	80,0	82,0	79,1		77,5	81,0	82,0	81,3	80,8	80,3	81,5	78,8	81,7	79,3	80,03	1,49	79,54
10	77,0	79,3	80,2	79,8	77,0	79,3	77,3	84,8	81,0	80,1	83,8	78,7	82,2	80,0	77,0	79,5	77,0	82,5	77,7	82,7	80,1	79,95	1,49	79,00
11	79,0	80,2	79,5	80,9	78,8	79,0	79,1	80,2	84,0	84,0	80,2	78,1	80,1	79,2	74,9	77,1	77,9	81,0	78,7	81,1	80,2	80,00	0,98	79,01
12	77,5	74,9	80,8	78,8	73,0	74,9	77,2	80,0	84,5	80,9	80,1	78,9	80,5	78,4	77,5	79,0	78,9	79,6	78,5	80,8	79,0	79,30	0,98	78,32
13	77,2	78,0	80,7	80,1	74,9	78,9	79,0	82,0	80,5	82,1	80,9	81,1	80,7	79,7	79,7	78,5	78,2	80,5	80,6	80,0	78,5	79,63	0,98	78,75
14	78,1	78,1	79,1	80,0	78,0	78,7	77,9	80,0	80,0	84,5	84,9	81,8	80,5	80,9	80,4	79,3	79,5	78,5	81,2	79,4	79,7	80,00	0,98	79,02
15	77,1	80,2	80,2	79,9	81,0	79,4	80,2	79,0	79,0	81,5	80,7		80,2	81,2	81,1	81,8	81,0	74,5	81,9	80,1	79,4	80,00	0,98	79,02
16	79,1	80,0	79,7	79,3	81,5		78,4	79,1	80,2	82,0	84,0	80,4	77,0	82,0	79,0	81,8	81,3	77,0	81,7	82,7	79,0	80,05	0,98	79,07
17	77,0	80,7	71,2	77,0	82,0	77,0	79,0	77,0	81,1	82,5	81,7	81,0	77,0	80,2	80,7	81,0	81,5	77,1	82,0	80,1	79,0	79,80	0,98	77,98
18	79,5	80,1		77,7	84,8	79,7	79,0	79,7	82,0	80,5	81,5	80,0	78,1	80,0	80,1	81,0	82,0	74,0	80,4	80,7	79,0	79,80	0,98	78,88
19	79,2	80,2	81,2	79,2	81,5	79,0	79,7	79,0	79,0	79,7	80,0	80,0	79,0	80,0	79,7	81,0	78,4	77,4	82,1	80,3	79,2	80,05	0,98	79,07
20	79,0	80,0	82,2	79,0	82,0	79,0	79,7	80,1	82,5	79,1	80,7	80,2	79,1	80,5	80,1	81,2	81,1	79,0	81,0	81,7	79,1	80,00	0,98	79,02
21	80,0	80,7	80,8	79,1	82,0	79,7	77,9	79,4	80,0	81,9	79,0	81,4	79,0	80,0	80,0	80,5	82,0	77,5	79,2	80,0	79,4	80,00	0,77	79,23
22	80,0	80,7	80,2	77,0	79,8		80,1	79,0	80,0	79,0	79,0	80,0	79,7	79,7	79,2	81,0	81,0	77,0	81,3	80,5	79,0	80,02	0,77	79,25
23	80,0	81,0	79,0	77,0	80,5	77,3	81,1	79,0	80,0	79,0	80,5	81,2	79,0	80,0	79,0	81,0	80,5	77,2	81,4	79,5	80,0	80,10	0,77	79,36
24	79,1	79,3	79,7	78,0		77,3	80,7	77,2	80,7	80,5	78,7	80,0	78,2	81,2	74,0	80,0	82,0	77,8	82,3	81,9	80,1	79,03	0,77	78,32
25	79,3	79,4	82,0	79,5	80,0	80,7	80,4	79,2	84,1	82,4	75,0	77,8	79,8	79,5	71,0	80,5	82,4	77,8	80,0	79,2	80,2	79,45	0,77	78,69
26	77,8	77,8	80,0	79,2		80,5	80,4	79,8	82,0	80,3	82,4	77,4	79,5	79,7	71,0	80,3	75,4	79,8	80,7	79,9	77,9	79,20	0,77	78,49
27	79,7	79,4	80,0	79,0	79,0	79,7	80,7	80,7	81,4	80,5	80,4	79,5	79,5	80,0	71,0	80,4	69,0	79,0	81,0	79,9	80,5	79,34	0,77	78,54
28	79,1	79,4	80,0	77,0	80,0	79,0	79,1	79,0	81,4	81,7	80,4	80,0	79,0	79,0	79,7	80,4	77,4	77,8	81,7	79,9	81,0	79,44	0,77	79,00
29	77,8	79,0	81,5	79,0	79,0	79,8	79,0	79,8	81,0	81,0	77,0	80,0	79,4	80,7	75,0	79,4	78,0	79,7	81,0	78,4	81,5	79,50	0,77	78,73
30	77,8	78,2	80,5	77,0		79,7	79,7	79,7	81,0	81,1		82,0	78,2	81,4	77,8	79,8	79,1	75,8	82,0	79,6	80,3	79,35	0,77	78,48

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1841												
1842												
1843												

TABLE VI.

Tables of the Mean, Greatest, and Least Heights, and the Extreme Differences of the Barometer and Thermometer at the Madras Observatory, in the Year 1796.

Months.	Barometer.						Thermometer.					
	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	°	°	°	°	°	°
January	30,177	—0,005	30,112	30,248	30,060	0,188	77,2	—2,03	75,17	80,8	70,5	10,5
February	30,133	—0,001	30,132	30,203	30,013	0,227	79,6	—1,913	77,687	84,8	71,6	13,2
March	30,072	—0,013	30,059	30,208	29,947	0,261	81,5	—1,59	79,91	89,7	79,4	10,3
April	29,994	—0,001	29,998	30,120	29,854	0,265	84,8	—1,68	83,22	90,8	75,2	15,6
May	29,905	—0,003	29,902	29,903	29,777	0,216	86,5	—1,83	86,70	90,5	76,9	22,1
June	29,859	—0,001	29,858	29,987	29,733	0,254	85,7	—0,87	84,83	94,8	76,6	18,2
July	29,808	—0,006	29,802	29,991	29,729	0,252	84,4	—1,35	82,05	94,6	76,3	18,3
August	29,875	+0,002	29,877	29,981	29,777	0,204	83,4	—1,77	82,13	90,6	77,7	12,9
September	29,924	0,000	29,924	30,029	29,805	0,224	84,7	—1,58	83,12	90,6	78,5	12,5
October	29,959	+0,005	29,964	30,107	29,811	0,286	83,3	—2,08	81,22	89,8	74,3	15,5
November	29,998	0,000	29,998	30,188	29,795	0,393	79,7	—1,08	77,62	85,2	72,3	12,9
December	30,050	—0,002	30,048	30,199	29,803	0,330	76,7	—2,00	74,7	81,3	70,2	11,1

General Mean ... 29,981 80,78

	Barometer.		Thermometer.	
	Inches.		°	
Greatest height during the year ...	30,000	Mean.	89,8	Mean.
Least " " " ...	29,759	Inches. 29,934	70,0	84,5
Extreme Difference ...	0,281		19,8	

For the Year 1797.

Months.	Barometer.						Thermometer.					
	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	°	°	°	°	°	°
January	30,077	−0,005	30,072	30,183	29,927	0,256						
February	30,095	−0,001	30,094	30,185	30,007	0,178						
March	30,021	−0,013	30,008	30,163	29,843	0,320	83,0	−1,59	81,41	90,5	71,0	19,5
April	29,932	−0,006	29,926	30,059	29,797	0,262	85,3	−1,68	83,62	94,7	75,0	19,7
May	29,838	−0,003	29,835	29,919	29,742	0,177	89,0	−1,80	87,20	101,5	81,0	20,5
June	29,829	−0,001	29,828	29,935	29,701	0,234	90,3	−0,87	89,43	99,9	79,5	20,4
July	29,822	−0,006	29,816	29,915	29,703	0,222	87,2	−1,35	85,85	94,3	79,1	15,4
August	29,841	+0,002	29,843	29,957	29,723	0,234	87,9	−1,27	86,63	94,6	78,0	16,6
September	29,912	0,000	29,912	30,087	29,714	0,373	85,2	−1,58	83,62	92,0	75,8	16,2
October	29,921	+0,005	29,926	30,061	29,465	0,596	83,2	−2,08	81,12	90,9	75,3	14,7
November	30,043	0,000	30,043	30,170	29,873	0,297	89,1	−1,09	79,02	85,5	68,2	17,3
December	30,079	−0,002	30,077	30,209	29,915	0,294	77,8	−2,00	75,80	81,6	70,5	11,1

General Mean ... 29,948 83,430

	Barometer.		Thermometer.	
	Inches.		°	
Greatest height during the year ...	30,209	Mean.	101,5	Mean.
Least " " " ...	29,465	Inches. 29,837	68,2	° 84,85
Extreme Difference ...	0,744		33,3	

For the Year 1798.

Months.	Barometer.						Thermometer.					
	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	°	°	°	°	°	°
January	30,146	— 0,005	30,141	30,245	30,029	0,216	76,9	—2,03	74,87	81,5	69,0	12,5
February	30,062	— 0,001	30,061	30,199	29,963	0,230	79,0	—1,913	79,087	85,9	67,5	17,5
March	30,062	— 0,013	30,049	30,207	29,888	0,319	82,4	—1,59	80,81	91,0	73,2	17,8
April	29,950	— 0,002	29,944	30,042	29,873	0,169						
May	29,934	— 0,003	29,931	30,050	29,764	0,295						
June	29,905	— 0,004	29,904	29,903	29,727	0,206	89,3	—0,87	89,03	98,7	81,4	17,3
July	29,906	— 0,006	29,900	29,975	29,721	0,254	88,2	—1,35	86,85	94,4	79,0	15,4
August	29,919	+ 0,002	29,912	30,074	29,725	0,339	85,3	—1,27	84,03	92,0	77,6	14,4
September	29,913	0,000	29,913	30,009	29,792	0,217	86,0	—1,58	84,42	92,0	79,2	12,8
October	29,924	+ 0,005	29,921	30,129	29,783	0,346	83,2	—2,08	83,12	91,0	74,0	17,0
November	30,002	0,000	30,002	30,205	29,774	0,331	79,4	—1,08	78,32	86,5	72,3	14,2
December	30,131	— 0,002	30,131	30,229	29,929	0,299	78,3	—2,09	76,3	83,7	65,6	18,1

General Mean ... 29,974 ... 81,744

	Barometer.		Thermometer.	
	Inches.		°	
Greatest height during the year	30,245	Mean.	98,7	Mean.
Least " " "	29,721	Inches. 29,983	65,6	° 82,1
Extreme Difference	0,524		33,1	

For the Year 1792.

Months.	Barometer.						Thermometer.					
	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	°	°	°	°	°	°
January	30,107	−0,005	30,102	30,200	29,927	0,273	76,9	−2,03	74,87	83,7	65,6	18,1
February	30,107	−0,001	30,103	30,194	29,959	0,235	78,9	−1,013	76,887	87,0	67,3	19,7
March	30,054	−0,013	30,041	30,152	29,945	0,267	82,9	−1,39	81,31	89,8	72,5	17,3
April	30,022	−0,006	30,016	30,122	29,839	0,283	84,9	−1,68	83,22	91,8	76,4	14,6
May	29,883	−0,003	29,880	30,012	29,765	0,247	89,3	−1,80	87,50	103,0	81,0	22,0
June	29,869	−0,001	29,868	29,997	29,753	0,244	88,0	−0,87	86,03	98,0	81,8	16,2
July	29,841	−0,006	29,835	29,998	29,756	0,242	84,3	−1,35	82,95	97,0	78,6	18,4
August	29,863	+0,002	29,865	30,008	29,746	0,262	86,0	−1,37	84,74	94,0	78,8	15,2
September	29,929	0,000	29,929	30,037	29,739	0,298	84,6	−1,58	83,02	89,4	78,0	11,4
October	30,037	+0,005	30,042	30,183	29,969	0,224	84,0	−2,08	82,72	90,8	77,3	13,5
November	30,067	0,000	30,067	30,202	29,835	0,367	80,5	−1,08	79,42	83,7	73,5	12,2
December	30,088	−0,002	30,086	30,189	29,848	0,341	78,4	−2,09	76,40	83,7	72,4	11,3

General Mean ... 29,968 81,430

	Barometer.		Thermometer.	
	Inches.		°	
Greatest height during the year ...	30,202	Mean...	103,0	Mean.
Least " " " ...	29,739	Inches. 29,970...	65,6	84,3
Extreme Difference ...	0,461	...	37,4	

For the Year 1800.

Months.	Barometer.						Thermometer.					
	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	°	°	°	°	°	°
January	30,132	−0,005	30,127	30,220	30,033	0,187	78,1	−2,03	76,07	82,5	71,8	10,7
February	30,112	−0,001	30,111	30,208	29,976	0,232	80,0	−1,013	78,087	88,9	73,8	15,1
March	30,055	−0,013	30,042	30,157	29,941	0,216	82,8	−1,59	81,21	88,8	75,0	13,8
April	29,959	−0,006	29,953	30,003	29,820	0,234	86,8	−1,08	85,12	91,5	79,8	11,7
May	29,868	−0,003	29,865	30,013	29,807	0,206	88,2	−1,89	86,40	95,6	80,8	11,8
June	29,852	−0,001	29,851	29,956	29,753	0,203	87,9	−0,87	87,03	95,3	79,6	15,7
July	29,869	−0,006	29,863	29,947	29,754	0,193	84,7	−1,35	83,35	90,5	79,7	10,8
August	29,884	+0,002	29,886	29,964	29,760	0,204	85,1	−1,27	83,83	91,9	77,5	13,7
September	29,931	0,000	29,931	30,042	29,805	0,237	84,1	−1,59	82,52	95,6	77,2	18,4
October	29,882	+0,005	29,887	30,000	29,775	0,225	84,4	−2,08	82,32	95,8	75,4	20,4
November	30,027	0,000	30,027	30,122	29,850	0,272	80,8	−1,08	79,72	88,0	72,0	16,0
December	30,037	−0,002	30,035	30,157	29,910	0,247	76,5	−2,00	74,5	81,2	67,6	16,6

General Mean ... 29,966 81,280

	Barometer.		Thermometer.	
	Inches.		°	
Greatest height during the year ...	30,220	Mean.	95,8	Mean.
Least " " " ...	29,700	Inches. 29,960	67,6	° 81,7
Extreme Difference ...	0,520	...	28,3	

For the Year 1801.

Months.	Barometer.						Thermometer.					
	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	°	°	°	°	°	°
January	30,197	−0,005	30,192	30,205	29,999	0,206	78,2	−2,03	76,17	82,8	69,4	13,4
February	30,079	−0,001	30,078	30,201	29,983	0,218	79,1	−1,913	77,187	85,5	68,4	17,1
March	30,020	−0,013	30,013	30,079	29,921	0,158	85,5	−1,59	83,91	90,6	75,8	14,8
April												
May												
June	29,840	−0,001	29,839	29,952	29,748	0,204	87,7	−0,87	86,83	101,0	75,3	26,3
July	29,852	−0,006	29,846	30,059	29,709	0,291	85,5	−1,35	84,15	96,7	77,6	19,1
August	29,868	+0,002	29,870	30,009	29,721	0,288	87,4	−1,27	86,13	95,3	79,3	16,0
September	29,887	0,000	29,887	29,980	29,723	0,266	84,3	−1,58	82,72	91,7	75,3	16,5
October	29,941	+0,005	29,946	30,051	29,760	0,291	80,9	−2,08	82,82	91,2	77,7	13,5
November	30,006	0,000	30,006	30,114	29,881	0,233	79,2	−1,08	78,22	87,7	72,2	15,5
December	30,074	−0,002	30,072	30,155	29,931	0,224	78,1	−2,00	76,10	82,7	70,7	9,0

General Mean ... 29,960 81,654

	Barometer.		Thermometer.	
	Inches.		°	
Greatest height during the year ...	30,205	Mean.	101,6	Mean.
Least " " " ...	29,799	Inches. 29,957	68,4	° 85,0
Extreme Difference ...	0,406	...	33,2	

For the Year 1802.

Months.	Barometer.						Thermometer.					
	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	°	°	°	°	°	°
January	30,098	— 0,005	30,093	30,213	29,985	0,228	78,2	—2,08	76,17	84,7	69,2	15,1
February	30,097	— 0,001	30,096	30,191	29,971	0,220	81,9	—1,913	79,087	86,8	70,0	16,9
March	30,098	— 0,013	30,085	30,166	29,848	0,318	85,5	—1,58	83,91	92,8	75,8	16,5
April	29,927	— 0,006	29,921	30,167	29,731	0,376	86,4	—1,68	84,72	95,8	79,0	16,9
May	29,869	— 0,003	29,877	30,069	29,750	0,259	87,9	—1,89	86,10	98,5	82,2	16,3
June	29,869	— 0,001	29,868	29,954	29,765	0,189	90,5	—0,87	89,63	96,5	81,3	15,2
July	29,859	— 0,006	29,853	29,950	29,744	0,206	88,9	—1,35	86,95	96,6	79,5	17,1
August	29,917	+ 0,002	29,919	30,040	29,814	0,232	85,9	—1,27	84,63	90,0	78,8	14,2
September	29,942	0,000	29,942	30,028	29,866	0,162	89,0	—1,58	87,42	97,0	69,3	12,7
October	29,938	+ 0,005	30,003	30,133	29,843	0,290	84,9	—2,08	82,82	92,4	77,9	15,4
November	30,024	0,000	30,024	30,144	29,853	0,291	79,7	—1,08	78,62	85,7	75,3	10,4
December	30,011	— 0,002	30,009	30,223	29,913	0,310	77,2	—2,00	75,2	85,9	72,0	13,0

General Mean 29,908 82,939

	Barometer.		Thermometer.	
	Inches.		°	
Greatest height during the year ...	30,223	Mean. Inches.	98,5	Mean.
Least " " " ...	29,731	29,977	69,2	84,63
Extreme Difference ...	0,492	...	29,3	

Table of the Mean, Greatest, and Least Heights, and the Extreme Differences of the Barometer and Thermometer, with the Fall of Rain, in the Year 1803.

Months.	Barometer.						Thermometer.						Fall of Rain.
	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	°	°	°	°	°	°	Inches.
January	30,125	−0,005	30,120	30,255	30,001	0,254	77,7	−2,03	75,67	81,7	71,8	9,9	
February	30,083	−0,001	30,082	30,177	29,971	0,206	79,6	−1,913	77,687	86,8	69,5	16,3	
March	30,075	−0,013	30,062	30,168	29,918	0,248	81,3	−1,59	81,71	91,5	72,7	18,8	
April	29,997	−0,006	29,991	30,077	29,859	0,227	85,5	−1,68	83,82	92,0	77,4	14,6	
May	29,915	−0,003	29,912	30,031	29,728	0,303	88,0	−1,50	86,28	99,4	81,2	18,2	
June	29,884	−0,001	29,883	30,079	29,742	0,329	89,2	−0,87	88,33	98,0	81,2	16,8	1,89½
July	29,894	−0,006	29,888	30,059	29,800	0,259	87,4	−1,35	86,05	94,4	80,1	14,3	1,79
August	29,932	+0,002	29,934	30,019	29,864	0,168	87,8	−1,27	86,53	96,5	81,0	15,5	0,83½
September	29,919	0,000	29,919	30,031	29,774	0,254	86,2	−1,58	85,62	95,0	77,7	17,3	7,09
October	30,073	+0,005	30,078	30,151	29,929	0,122	84,8	−2,58	82,72	92,8	77,2	15,6	11,58½
November	30,080	0,000	30,080	30,153	29,909	0,144	80,5	−1,08	79,42	88,0	76,0	12,0	36,425
December	30,121	−0,002	30,119	30,240	29,965	0,275	79,3	−2,00	77,3	86,0	75,0	11,0	11,07½

General Mean ... 30,006 82,571

	Barometer.		Thermometer.	
	Inches.		°	
Greatest height during the year ...	30,240	Mean. Inches.	99,4	Mean. °
Least " " " ...	29,728	29,984	69,5	84,45
Extreme Difference ...	0,512	...	29,9	

For the Year 1804.

Months.	Barometer.						Thermometer.						Fall of Rain.
	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	°	°	°	°	°	°	Inches.
January	30,155	— 0,005	30,150	30,302	29,989	0,313	80,9	—2,03	78,87	86,8	74,3	12,5	
February	30,133	— 0,001	30,132	30,279	30,005	0,274	82,4	—1,013	80,487	90,7	75,2	15,5	1,05
March	30,155	— 0,013	30,142	30,181	29,903	0,278	83,2	—1,59	81,61	94,4	71,3	23,1	0,03½
April	30,004	— 0,006	29,998	30,099	29,827	0,272	87,3	—1,08	85,52	94,0	79,3	14,7	
May	29,926	— 0,003	29,923	30,105	29,763	0,342	90,3	—1,80	88,50	99,6	84,5	14,3	
June	29,887	— 0,001	29,886	29,965	29,756	0,209	90,0	—0,87	89,73	97,8	83,8	14,0	0,99½
July	29,887	— 0,006	29,881	29,963	29,788	0,175	89,8	—1,35	88,45	96,5	80,5	16,0	0,74½
August	29,922	+ 0,002	29,924	30,048	29,807	0,241	86,9	—1,27	84,73	93,8	79,4	13,9	3,36¾
September	29,935	0,000	29,935	30,055	29,761	0,294	85,7	—1,58	85,12	95,0	79,8	15,2	1,52½
October	29,975	+ 0,005	29,980	30,099	29,683	0,436	84,8	—2,08	82,72	91,0	74,2	19,8	12,41
November	30,077	0,000	30,077	30,239	29,948	0,291	81,8	—1,08	80,72	89,0	73,3	14,7	5,32½
December	30,156	— 0,002	30,154	30,281	30,041	0,240	78,5	—2,00	76,50	85,0	71,0	14,8	5,26

General Mean 30,007 63,580

	Barometer.		Thermometer.	
	Inches.		°	
Greatest height during the year ...	30,302	Mean. Inches.	98,8	Mean. °
Least " " " ...	29,938	30,002	71,0	84,9
Extreme Difference ...	0,010	...	27,8	

For the Year 1803.

Months.	Barometer.						Thermometer.						Fall of Rain.
	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	°	°	°	°	°	°	Inches.
January	30,152	−0,005	30,147	30,215	30,055	0,160	77,8	−2,03	75,77	83,2	71,1	12,1	2,38½
February	30,110	−0,001	30,109	30,200	30,014	0,195	80,0	−1,913	78,087	87,3	69,4	17,9	
March	30,056	−0,013	30,043	30,201	29,867	0,334	83,0	−1,59	81,41	89,4	71,6	18,4	
April	29,995	−0,006	29,987	30,127	29,842	0,285	82,1	−1,68	81,02	90,8	75,7	18,1	
May	29,861	−0,001	29,860	29,993	29,673	0,320	90,1	−1,80	88,30	90,9	83,8	15,2	0,34
June	29,861	−0,001	29,859	29,947	29,731	0,216	90,2	−0,87	89,33	96,8	81,6	15,2	1,39½
July	29,888	−0,006	29,882	30,059	29,742	0,307	85,3	−1,35	83,95	92,0	79,0	14,0	2,66½
August	29,903	+0,002	29,905	30,011	29,793	0,218	85,5	−1,27	84,23	90,4	75,2	18,2	3,40
September	29,900	0,000	29,930	29,992	29,832	0,161	84,8	−1,58	83,22	91,7	79,3	12,4	3,42
October	29,860	+0,005	29,864	30,081	29,744	0,337	83,2	−2,08	81,12	89,7	78,5	11,2	6,46
November	30,054	0,000	30,054	30,248	29,844	0,404	81,3	−1,09	80,22	87,8	73,2	14,6	6,16
December	30,139	−0,002	30,137	30,278	30,009	0,269	79,3	−2,03	77,3	84,2	73,9	10,3	4,99

General Mean 30,067 82,846

	Barometer.		Thermometer.	
	Inches.		°	
Greatest height during the year ...	30,278	Mean. Inches.	90,8	Mean. °
Least " " " ...	29,673	29,975	69,4	84,2
Extreme Difference ...	0,005	...	29,6	

For the Year 1866.

Months.	Barometer.						Thermometer.						Fall of Rain.
	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	°	°	°	°	°	°	Inches.
January	30,152	—0,005	30,147	30,244	30,032	0,212	77,2	—2,03	75,17	83,9	70,2	17,8	0,43
February	30,085	—0,001	30,084	30,178	29,981	0,197	78,2	—1,313	76,987	85,4	70,4	15,0	
March	30,039	—0,013	30,026	30,160	29,909	0,251	81,3	—1,59	79,71	87,6	71,9	16,0	
April	29,961	—0,006	29,955	30,102	29,769	0,333	84,3	—1,68	82,62	97,6	75,3	22,3	
May	29,884	—0,003	29,881	29,992	29,735	0,257	87,8	—1,80	86,0	98,4	81,0	17,4	
June	29,879	—0,001	29,878	29,996	29,786	0,210	85,4	—0,87	84,53	95,0	78,5	16,5	
July	29,856	—0,006	29,850	29,993	29,710	0,283	87,0	—1,35	85,65	96,5	78,0	18,5	3,35
August	29,869	+0,002	29,871	29,979	29,765	0,214	85,7	—1,27	84,43	93,4	78,8	14,6	14,25
September	29,912	0,000	29,912	30,141	29,715	0,426	87,8	—1,58	86,22	96,7	80,0	16,7	1,85
October	29,971	+0,005	29,976	30,139	29,836	0,303	85,0	—2,08	82,92	91,0	77,0	14,0	30,9
November	29,970	0,000	29,970	30,118	29,878	0,235	81,9	—1,08	80,82	89,8	72,2	17,4	7,39
December	30,044	—0,002	30,042	30,352	30,017	0,335	78,1	—2,00	76,10	80,8	75,0	5,8	3,7

General Mean ... 29,968 81,705

	Barometer.		Thermometer.	
	Inches.		°	
Greatest height during the year ...	30,152	Mean.	97,6	Mean.
Least " " " ...	29,710	Inches. 30,001	70,2	83,9
Extreme Difference ...	0,442	...	27,4	

For the Year 1807.

Months.	Barometer.						Thermometer.						Fall of Rain.
	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	°	°	°	°	°	°	Inches.
January	29,911	−0,005	29,906	30,217	29,666	0,551	77,7	−2,03	75,67	81,9	73,6	8,3	
February	29,961	−0,004	29,909	29,780	29,337	0,549	75,8	−1,913	73,087	83,2	68,0	15,2	
March	30,540	−0,013	30,533	30,871	30,221	0,559	74,3	−1,59	72,71	90,2	78,5	11,7	
April	30,919	−0,006	30,012	30,152	29,885	0,306	71,8	−1,68	70,12	93,5	86,1	7,4	0,025
May	29,795	−0,003	29,792	29,653	29,738	0,315	84,7	−1,86	82,90	90,9	78,5	12,4	1,700
June	29,922	−0,001	29,921	29,923	29,921	0,002	90,1	−0,87	89,23	94,9	85,3	9,6	
July	29,810	−0,006	29,804	29,878	29,758	0,120	89,7	−1,35	88,35	92,1	87,3	4,8	1,381
August	29,871	+0,002	29,873	29,913	29,830	0,083	85,6	−1,27	84,33	87,2	84,0	3,2	1,050
September	29,923	0,000	29,823	29,925	29,722	0,203	85,2	−1,58	83,62	86,0	81,8	6,8	2,930
October	29,822	+0,005	29,827	30,054	29,813	0,238	82,5	−2,08	80,42	85,7	79,4	6,3	5,785
November	29,559	0,000	29,559	30,054	29,135	0,919	79,3	−1,08	78,22	83,7	74,9	8,8	
December	30,002	−0,002	30,000	30,031	29,987	0,044	79,6	−2,09	77,6	82,7	73,7	9,0	42,00

General Mean 29,920 79,738

	Barometer.		Thermometer.	
	Inches.		°	
Greatest height during the year ...	30,054	Mean. Inches.	84,9	Mean. °
Least " " " ...	29,409	29,733	68,0	81,45
Extreme Difference ...	0,645	...	20,9	

For the Year 1813.

Months	Barometer.						Thermometer.						Fall of Rain.
	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	°	°	°	°	°	°	Inches.
January	29,324	−0,050	29,274	30,120	28,917	1,203	29,9	−2,08	36,37	49,0	69,0	20,0	
February	29,304	−0,001	29,304	30,171	28,897	1,267	29,9	−1,913	37,047	49,4	28,4	15,9	.
March	29,302	−0,013	29,289*	30,171	28,739	1,432	31,9	−1,99	40,21	49,0	29,0	21,0	0,45
April	29,283	−0,000	29,279	30,037*	28,869	1,209	40,33	−1,98	44,27	59,5	30,0	29,5	
May	29,250	−0,001	29,217	29,958	28,858	1,200	51,33	−1,99	60,45	103,0	39,0	63,0	0,71
June	29,230	−0,001	29,229	29,740	28,839	0,901	60,30	−0,97	67,43	89,0	48,5	40,5	1,7
July	29,248	−0,006	29,242	29,803	28,934	0,869	69,1	−1,25	80,35	99,0	60,0	39,0	1,21
August	29,270	+0,002	29,272	29,860	29,009	0,851	65,5	−1,27	84,23	97,5	78,5	19,0	0,71
September	29,300	0,000	29,300	29,930	29,000	0,930	60,0	−1,24	85,62	88,0	70,0	18,0	2,71
October	29,325	+0,005	29,330	29,960	29,079	0,881	54,5	−2,08	82,12	82,5	70,5	12,1	2,1
November	29,310	0,000	29,310	30,190	29,229	0,961	79,9	−1,06	77,91	87,0	70,0	16,5	29,1
December	29,295	−0,052	29,233	30,140	28,939	1,201	75,5	−0,09	75,59	84,0	69,0	14,9	0,01

Greatest Mean 29,351 60,650

	Barometer.		Thermometer.	
	Inches.	Mean. Inches.	°	Mean. °
Greatest height during the year	30,140		103,0	
Least	28,939	29,289	69,0	85,5
Extreme Difference	1,201		34,0	

For the Year 1814.

Months.	Barometer.						Thermometer.						Fall of Rain.
	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	°	°	°	°	°	°	Inches.
January	29,939	−0,005	29,905	30,149	29,690	0,469	73,8	−2,03	74,37	85,0	67,8	17,2	
February	30,004	−0,004	30,008	30,075	29,934	0,141	77,2	−1,313	76,297	85,0	63,5	15,5	
March	29,981	−0,013	29,968	30,009	29,919	0,150	80,2	−1,53	78,65	89,0	71,5	17,5	
April	29,880	−0,006	29,874	30,030	29,740	0,290	84,2	−1,68	82,52	91,5	77,0	14,5	
May	29,850	−0,001	29,827	29,929	29,740	0,189	82,0	−1,80	80,34	101,6	82,5	19,1	
June	29,794	−0,001	29,793	29,910	29,678	0,232	91,5	−0,87	90,63	100,0	82,5	18,1	
July	29,805	−0,006	29,799	29,910	29,700	0,210	90,1	−1,35	88,75	101,0	79,2	21,8	1,2
August	29,860	+0,002	29,862	29,903	29,701	0,200	87,0	−1,27	85,73	93,0	79,9	16,9	4,8½
September	29,851	0,000	29,851	29,988	29,724	0,264	84,0	−1,58	83,52	92,0	77,8	14,2	8,1½
October	29,881	+0,005	29,876	30,048	29,715	0,333	84,1	−2,08	82,02	91,2	77,0	14,2	7,1
November	29,983	0,000	29,983	30,061	29,900	0,165	79,3	−1,08	78,22	88,2	70,8	17,9	6,0
December	30,012	−0,002	30,010	30,138	29,887	0,251	77,2	−2,00	75,00	86,0	68,8	17,8	3,7

General Mean ... 29,851 81,304

	Barometer.		Thermometer.	
	Inches.		°	
Greatest height during the year ...	30,149	Mean. Inches.	101,6	Mean. °
Least " " " ...	29,678	29,900	67,8	84,7
Extreme Difference ...	,462	...	33,8	

For the Year 1814

Months	Barometer. Adjustment Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	Thermometer. Adjustment Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	Fall of Rain.
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	°	°	°	°	°	°	Inches.
January	29,077	— 0,005	29,072	29,709	29,344	0,365	35,0	—2,06	32,97	60,5	6?,5	17,0	1,71
February	29,034	— 0,001	29,033	29,130	28,879	0,251	35,9	—1,953	33,997	60,2	30,4	29,8	
March	29,332	— 0,013	29,319	29,730	29,024	0,706	39,9	—1,98	38,01	59,0	30,0	29,0	
April	29,202	— 0,002	29,200	29,609	28,794	0,815	39,1	—1,98	37,12	59,0	30,5	28,5	
May	29,824	— 0,005	29,819	29,944	29,705	0,239	52,2	—1,99	50,20	104,5	80,0	12,4	
June	29,827	— 0,001	29,825	29,925	29,730	0,195	60,9	—0,97	59,93	87,5	34,0	53,5	
July	29,900	— 0,006	29,794	29,900	29,709	0,191	64,8	—1,95	63,05	91,0	37,0	54,0	6,41
August	29,924	+ 0,007	29,978	29,960	29,708	0,252	62,6	—1,97	60,73	90,2	29,0	17,2	
September	29,871	0,000	29,871	29,998	29,736	0,262	62,1	—1,98	64,12	86,8	27,5	17,8	2,34
October	29,942	+ 0,000	29,917	29,955	29,808	0,251	62,3	—2,00	60,32	90,7	24,0	16,7	6,24
November	29,908	0,000	29,909	30,001	29,730	0,271	37,7	—1,96	70,02	87,0	69,5	18,5	20,14
December	30,049	— 0,002	30,047	30,288	29,959	0,329	76,7	—2,08	74,69	85,5	70,0	15,5	4,8

General Mean 29,919 81,243

	Barometer.		Thermometer.	
	Inches.		°	
Greatest height during the year ...	30,300	Mean. Inches 29,919	104,5	Mean. ° 85,3
Least " " " ...	29,709		69,5	
Extreme Difference ...	0,591		35,0	

For the Year 1813.

Months.	Barometer.						Thermometer.						Fall of Rain.
	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	°	°	°	°	°	°	Inches.
January	30,136	−0,005	30,131	30,228	30,044	0,184	74,75	−2,03	72,72	83,5	66,0	17,5	0,1
February	30,105	−0,001	30,104	30,219	30,000	0,219	75,1	−1,94	73,187	85,0	68,0	17,1	0,7½
March	30,025	−0,013	30,012	30,120	29,900	0,190	78,8	−1,59	76,41	91,0	66,0	25,0	
April	29,953	−0,006	29,945	30,082	29,820	0,262	81,6	−1,68	80,32	91,2	70,8	20,4	
May	29,860	−0,003	29,857	30,000	29,720	0,280	89,7	−1,83	87,86	100,7	78,8	21,9	0,2
June	29,829	−0,001	29,808	29,940	29,708	0,292	89,9	−0,87	89,03	99,8	80,0	19,8	0,45
July	29,857	−0,000	29,851	29,970	29,745	0,225	86,0	−1,35	84,65	94,6	77,5	17,1	4,6½
August	29,855	+0,002	29,857	29,970	29,740	0,230	84,4	−1,27	83,13	92,2	76,7	15,5	3,8½
September	29,857	0,000	29,857	30,028	29,760	0,262	83,9	−1,58	82,32	93,0	74,5	18,8	9,½
October	30,025	+0,005	30,030	30,120	29,930	0,190	80,5	−2,08	81,42	94,0	73,0	21,0	6,8½
November	30,035	0,000	30,035	30,150	29,920	0,230	80,5	−1,08	79,42	85,0	75,5	10,1	12,3½
December	30,105	−0,002	30,103	30,210	30,000	0,210	76,7	−2,09	74,76	84,5	69,0	15,5	1,4½

General Mean 29,972 80,434

	Barometer.		Thermometer.	
	Inches.		°	
Greatest height during the year . . .	30,228	Mean. Inches.	100,7	Mean. °
Least " " " . . .	29,720	29,974	66,0	83,3
Extreme Difference . . .	0,508	. . .	34,7	

For the Year 1817.

Months.	Barometer.						Thermometer.						Fall of Rain.
	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	°	°	°	°	°	°	Inches.
January	30,179	−0,003	30,176	30,300	29,100	0,200	75,9	−2,03	73,87	86,8	49,8	13,8	0,74
February	29,333	−0,002	29,132	30,300	29,900	0,304	77,5	−1,951	75,547	87,5	47,5	39,9	
March	29,653	−0,013	29,639	30,301	29,240	0,221	80,8	−1,98	78,81	90,9	70,8	20,0	
April	30,027	−0,003	30,021	30,340	29,815	0,215	83,7	−1,98	81,72	92,8	71,5	18,5	
May	29,942	−0,003	29,941	30,304	29,639	0,275	87,3	−1,93	85,39	98,5	77,5	19,0	0,34
June	29,905	−0,001	29,904	30,310	29,900	0,210	90,8	−0,97	89,73	97,4	79,4	18,1	0,34
July	29,908	−0,000	29,908	30,308	29,900	0,208	88,5	−1,23	87,15	99,0	79,0	19,0	1,74
August	29,901	+0,002	29,903	30,295	29,778	0,517	86,05	−1,27	84,78	90,5	77,5	13,0	3,41
September	29,900	0,000	29,900	30,278	29,725	0,553	83,8	−1,18	82,62	94,6	72,8	21,8	7,7
October	29,877	+0,005	29,882	30,300	29,855	0,245	82,7	−0,98	81,72	90,8	73,5	17,3	10,8
November	29,902	0,000	29,902	30,345	29,840	0,505	77,6	−1,08	76,52	89,5	65,5	24,0	10,84
December	30,112	−0,003	30,110	30,305	30,000	0,305	79,2	−2,00	77,2	86,8	72,5	13,5	6,11

General Mean ... 29,909 61,320

	Barometer.		Thermometer.	
	Inches.		°	
Greatest height during the year ...	30,300	Mean.	89,5	Mean.
Least	29,725	30,013	66,5	83,0
Extreme Difference ...	,575	...	23,0	

For the Year 1818.

Months.	Barometer.						Thermometer.						Fall of Rain.
	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	°	°	°	°	°	°	Inches.
January	30,321	−0,205	30,115	30,510	29,560	0,950	37,70	−0,03	37,67	65,4	40,6	17,4	
February	30,109	−0,091	30,009	30,250	29,600	0,650	39,0	−1,013	37,987	61,6	19,2	42,3	
March	29,956	−0,013	29,943	30,145	29,968	0,177	39,7	−1,20	38,51	58,2	19,2	39,0	
April	29,942	−0,001	29,940	30,160	29,960	0,227	44,0	−1,08	42,92	61,0	26,5	35,0	0,60
May	29,937	−0,003	29,934	30,040	29,750	0,290	51,0	−1,70	50,30	103,0	30,0	73,0	
June	29,851	−0,001	29,850	29,999	29,735	0,264	56,5	−0,07	56,43	100,5	40,0	59,5	0,75
July	29,870	−0,006	29,870	30,005	29,748	0,257	61,0	−1,55	57,45	90,5	71,5	19,0	12,05
August	29,750	+0,002	29,851	29,950	29,678	0,272	63,5	−1,27	59,23	93,0	70,0	23,0	6,4
September	29,960	0,000	29,960	29,978	29,900	0,178	55,0	−1,50	53,52	92,0	79,0	14,0	5,4
October	29,973	+0,005	29,978	30,070	29,770	0,300	48,7	−2,08	46,62	91,5	74,0	17,5	17,9
November	30,022	0,000	30,022	30,110	29,895	0,215	38,5	−1,08	37,42	65,5	52,0	13,5	15,6
December	29,954	−0,009	29,909	30,209	29,770	0,439	37,0	−0,03	36,99	64,0	27,0	14,0	7,78

General Mean ... 29,909 58,209

	Barometer.		Thermometer.				
	Inches.					°	
Greatest height during the year ...	30,510	Means. Inches.	...	...	...	103,0	Means. °
Least	29,178	1,736	...	...	..	08,5	80,8
Extreme Difference ...	0,764	...	...	...	..	25,0	

For the Year 1819.

Months.	Barometer.						Thermometer.						Fall of Rain.
	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	°	°	°	°	°	°	Inches.
January	30,084	— 0,005	30,079	30,260	29,968	0,292	70,2	—2,01	71,17	82,4	64,0	18,4	
February	30,114	— 0,001	30,113	30,220	30,008	0,212	76,2	—1,013	74,287	87,0	65,5	21,5	
March	30,010	— 0,013	29,997	30,130	29,885	0,251	79,8	—1,03	78,21	89,6	70,0	19,6	
April	29,832	— 0,002	29,816	30,045	29,600	0,445	83,8	—1,08	82,12	92,2	75,5	16,7	2,9
May	29,862	— 0,003	29,859	30,025	29,700	0,325	80,8	—1,80	80,00	97,7	82,0	15,7	
June	29,886	— 0,001	29,885	29,998	29,784	0,204	91,0	—0,87	90,13	100,0	82,0	18,0	0,1½
July	29,837	— 0,002	29,831	29,945	29,730	0,215	88,0	—1,05	86,65	97,0	79,0	18,0	3,2
August	29,876	+ 0,002	29,878	29,998	29,755	0,243	88,2	—1,27	86,93	96,5	80,0	16,5	1,3
September	29,900	0,000	29,900	30,030	29,770	0,260	84,7	—1,58	83,12	93,0	76,5	16,5	5,9
October	29,920	+ 0,005	29,934	30,075	29,784	0,291	84,0	—2,08	81,92	94,0	74,0	20,0	3,0
November	29,987	0,000	29,987	30,200	29,774	0,426	81,5	—1,08	80,42	88,0	75,0	13,0	10,8
December	30,107	— 0,002	30,105	30,215	30,000	0,215	78,2	—2,00	76,20	84,5	72,0	12,5	0,7

General Mean 29,949 81,505

	Barometer.		Thermometer.	
	Inches.		°	
Greatest height during the year ...	30,220	Mean. Inches.	100	Mean. °
Least " " " ...	29,000	29,910	64	82,0
Extreme Difference ...	0,020	...	36,0	

For the Year 1820.

Months.	Barometer.						Thermometer.						Fall of Rain.
	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	°	°	°	°	°	°	Inches.
January	30,046	−0,005	30,041	30,185	29,907	0,278	70,7	−2,03	70,67	82,2	63,2	13,0	
February	30,060	−0,004	30,059	30,185	29,945	0,240	78,4	−1,313	76,487	86,8	70,0	16,8	
March	29,983	−0,011	29,972	30,219	29,580	0,239	79,5	−1,59	78,01	89,3	76,0	19,3	6,75
April	29,987	−0,006	29,981	30,139	29,855	0,305	85,4	−1,08	83,72	92,2	78,0	13,0	0,5
May	29,983	−0,003	29,982	30,100	28,670	1,430	83,1	−1,80	84,30	98,2	74,0	24,2	17,17
June	29,987	−0,001	29,986	30,129	29,785	0,375	89,3	−0,87	87,43	96,0	80,5	15,1	0,85
July	29,955	−0,004	29,949	30,115	29,795	0,320	87,4	−1,55	86,05	97,0	77,8	19,2	3,52
August	29,936	+0,002	29,938	30,072	29,800	0,272	86,5	−1,27	85,23	94,0	79,0	15,0	3,17
September	30,050	0,001	30,050	30,200	29,950	0,300	85,2	−1,58	83,62	92,5	78,0	14,5	1,7
October	30,136	+0,005	30,031	30,238	30,015	0,223	85,3	−2,08	82,92	94,0	76,0	18,0	12,28
November	30,121	0,000	30,121	30,235	30,075	0,160	81,3	−1,08	80,22	89,2	73,0	16,2	4,5
December	30,073	−0,002	30,008	30,220	29,664	0,556	78,9	−2,03	76,9	86,5	72,0	14,5	19,7

General Mean ... 29,950 81,546

	Barometer.		Thermometer.	
	Inches.		°	
Greatest height during the year ...	30,238	Mean. Inches.	98,2	Mean. °
Least " " " ...	29,506	29,859	63,2	83,7
Extreme Difference ...	0,678	...	19,0	

For the Year 1821.

Months	Barometer.						Thermometer.						Fall of Rain
	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	°	°	°	°	°	°	Inches.
January	30,109	— 0,005	30,104	30,379	29,939	0,440	79,5	—2,03	77,47	85,5	76,8	14,7	3,0
February	30,158	— 0,001	30,157	30,378	30,009	0,379	80,5	—1,013	78,587	87,5	79,0	17,5	
March	30,080	— 0,013	30,076	30,215	29,945	0,270	83,0	—1,59	81,41	89,5	74,5	15,7	0,75
April	30,064	— 0,006	30,058	30,217	29,959	0,258	86,7	—1,01	85,67	94,5	78,5	16,5	1,7
May	29,959	— 0,003	29,957	30,128	29,698	0,430	89,3	—1,80	87,50	96,5	85,5	11,0	
June	29,941	— 0,001	29,940	30,049	29,809	0,240	90,2	—0,87	89,33	100,5	80,7	17,8	1,3
July	29,939	— 0,006	29,937	30,010	29,855	0,155	89,3	—1,35	88,05	94,0	82,9	12,0	1,3
August	29,908	— 0,007	29,940	30,008	29,805	0,203	87,1	—1,37	85,73	92,5	80,6	12,2	3,17
September	29,948	0,000	29,941	30,109	29,853	0,256	85,3	—1,50	83,75	90,0	80,0	10,0	7,3
October	29,959	— 0,005	29,954	30,145	29,760	0,385	83,9	—2,09	81,80	89,5	77,5	14,0	1,0
November	30,115	0,000	30,115	30,339	29,955	0,385	80,2	—1,08	79,12	86,5	73,0	13,5	1,75
December	30,125	— 0,002	30,123	30,253	29,910	0,343	79,0	—2,00	77,0	82,2	71,0	11,2	4,25

General Mean 29,953 82,587

	Barometer.		Thermometer.	
	Inches.	Means.	°	Means.
Greatest height during the year ...	30,378	30,378	100,5	100,5
Least ...	29,698	29,698	70,0	70,0
Extreme Difference ...	0,680		30,5	

For the Year 1822.

Months.	Barometer.						Thermometer.						Fall of Rain.
	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	°	°	°	°	°	°	Inches.
January	30,157	−0,005	30,152	30,242	30,000	0,242	79,1	−2,04	77,07	83,3	72,0	11,3	1,87
February	30,152	−0,001	30,151	30,280	30,015	0,265	81,8	−1,043	79,89	90,0	74,0	16,0	
March	30,067	−0,013	30,054	30,278	29,900	0,378	85,1	−1,39	80,51	97,2	75,0	22,2	
April	30,081	−0,006	30,075	30,185	29,965	0,220	80,6	−1,08	84,92	90,5	79,0	14,5	0,02
May	29,904	−0,003	29,901	30,109	29,705	0,305	90,4	−1,00	89,50	101,0	83,5	17,5	
June	29,911	−0,001	29,910	30,015	29,710	0,305	88,4	−0,87	87,52	96,6	79,2	17,1	1,52
July	29,893	−0,002	29,884	30,025	29,782	0,239	86,4	−1,35	85,05	92,5	78,0	15,5	0,55
August	29,912	+0,002	29,914	30,035	29,785	0,250	85,6	−1,27	84,33	93,5	78,0	15,5	0,7
September	29,928	0,000	29,928	30,070	29,800	0,270	85,0	−1,50	84,32	91,4	80,0	11,4	2,37
October	29,902	+0,005	29,907	30,035	29,820	0,285	83,3	−2,08	81,22	94,5	76,0	15,5	20,57
November	30,051	0,000	30,051	30,165	29,900	0,265	80,4	−1,08	79,32	89,5	73,7	14,8	21,37
December	30,109	−0,002	30,107	30,300	29,950	0,350	79,7	−2,00	77,70	90,9	71,8	14,2	3,27

General Mean 30,043 82,59

	Barometer.		Thermometer.	
	Inches.		°	
Greatest height during the year . . .	30,280	Mean. Inches.	101,0	Mean. °
Least " " " . . .	29,705	29,992	71,8	83,4
Extreme Difference . . .	0,575	. . . .	29,2	

For the Year 1823.

Months.	Barometer.						Thermometer.						Fall of Rain.
	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	°	°	°	°	°	°	Inches.
January	30,171	−0,003	30,168	30,300	29,985	0,315	80,1	−2,03	78,07	87,4	69,5	17,9	1,45
February	30,165	−0,001	30,164	30,275	29,908	0,377	81,7	−1,913	79,79	89,2	71,0	18,2	
March	30,086	−0,013	30,073	30,185	29,915	0,270	80,9	−1,59	82,31	91,0	75,0	16,0	0,92
April	30,008	−0,008	30,002	30,145	29,887	0,258	87,1	−1,08	86,02	94,4	79,0	15,4	
May	29,995	−0,003	29,922	30,015	29,785	0,280	89,3	−1,83	87,86	104,2	81,0	23,2	0,27
June	29,864	−0,001	29,863	30,048	29,725	0,323	90,6	−0,87	89,73	100,0	82,8	17,2	2,05
July	29,892	−0,006	29,886	30,000	29,795	0,205	88,8	−1,35	87,45	97,0	80,0	17,0	2,87
August	29,922	+0,002	29,924	30,008	29,809	0,208	87,3	−1,27	86,03	96,0	77,8	18,2	3,15
September	29,944	0,000	29,949	30,076	29,862	0,214	85,9	−1,58	84,32	99,2	78,0	15,2	4,4
October	30,054	+0,005	30,059	30,165	29,842	0,323	86,2	−2,08	84,12	94,0	75,5	18,5	10,4
November	30,121	0,000	30,121	30,276	29,909	0,376	81,8	−1,08	80,72	89,5	72,0	17,5	6,9
December	30,124	−0,002	30,122	30,280	30,110	0,170	80,6	−2,00	78,6	89,8	69,0	18,8	6,2

General Mean ... 30,023 80,70

	Barometer.		Thermometer.	
	Inches.		°	
Greatest height during the year ...	30,300	Mean.	103,2	Mean.
Least " " " ...	29,725	Inches. 30,012	69,0	° 80,1
Extreme Difference ...	0,575	...	30,2	

For the Year 1824.

Months.	Barometer.						Thermometer.						Fall of Rain.
	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	°	°	°	°	°	°	Inches.
January	30,188	−0,005	30,183	30,335	30,040	0,295	80,0	−2,03	77,97	87,0	64,6	22,4	1,97
February	30,131	−0,001	30,130	30,237	29,964	0,273	81,6	−1,914	79,69	91,7	67,7	24,0	
March	30,117	−0,013	30,104	30,255	29,948	0,307	83,4	−1,59	81,81	91,5	70,4	21,1	
April	30,046	−0,006	30,040	30,135	29,918	0,217	86,8	−1,68	85,12	93,0	73,5	19,5	
May	29,925	−0,003	29,922	30,065	29,815	0,250	90,3	−1,80	88,50	101,8	79,0	22,8	
June	29,868	−0,001	29,867	29,955	29,755	0,200	91,2	−0,87	90,33	97,5	82,2	15,0	
July	29,912	−0,006	29,906	30,055	29,825	0,230	91,7	−1,35	90,35	98,6	83,8	14,2	2,25
August	29,960	+0,002	29,962	30,085	29,836	0,247	89,1	−1,27	87,83	96,8	82,0	14,0	2,05
September	29,908	0,000	29,908	30,085	29,915	0,170	89,3	−1,58	87,72	98,0	83,2	14,8	2,47
October	30,027	+0,005	30,032	30,145	29,898	0,247	83,4	−2,08	81,32	89,8	78,0	11,8	14,35
November	30,071	0,009	30,071	30,185	29,948	0,237	82,2	−1,08	81,12	86,0	77,2	8,8	10,27
December	30,201	−0,002	30,199	30,300	30,050	0,250	80,6	−2,00	78,6	85,4	74,2	11,2	3,95

General Mean ... 30,036 84,20

	Barometer.		Thermometer.	
	Inches.		°	
Greatest height during the year ...	30,335	Mean. Inches.	101,8	Mean.
Least " " " ...	29,755	30,045	64,6	83,2
Extreme Difference ...	0,580	...	37,2	

For the Year 1825.

Months.	Barometer.						Thermometer.						Fall of Rain.
	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	Apparent Mean.	Correction.	Corrected Mean.	Greatest.	Least.	Extreme Difference.	
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	°	°	°	°	°	°	Inches.
January	30,297	— 0,005	30,192	30,305	30,108	0,197	79,8	—2,05	77,77	84,0	72,0	12,0	9,17
February	30,148	— 0,001	30,147	30,305	30,015	0,295	82,4	—1,913	80,49	89,0	71,5	17,5	
March	30,111	— 0,013	30,098	30,335	29,975	0,300	84,6	—1,59	83,01	89,2	74,4	14,8	
April	30,059	— 0,008	30,014	30,180	29,900	0,280	87,7	—1,08	86,92	91,4	78,2	13,2	
May	29,961	— 0,003	29,961	30,125	29,800	0,325	90,6	—1,89	88,89	99,0	84,0	15,0	4,25
June	29,960	— 0,001	29,908	30,025	29,755	0,270	91,0	—0,87	90,13	98,0	82,5	15,5	1,87
July	29,926	— 0,006	29,920	30,021	29,778	0,243	89,9	—1,35	87,65	97,0	81,4	15,6	3,07
August	29,932	+ 0,002	29,934	30,045	29,768	0,277	86,7	—1,27	85,43	95,0	80,0	15,0	7,67
September	29,987	0,000	29,987	30,078	29,855	0,233	87,0	—1,58	85,42	94,8	81,8	13,8	3,5
October	30,020	+ 0,005	30,025	30,145	29,850	0,235	85,7	—2,08	83,62	92,4	79,6	12,4	17,47
November	30,045	0,000	30,045	30,200	29,865	0,335	82,7	—1,68	81,02	87,5	76,5	11,0	11,09
December	30,120	— 0,002	30,121	30,250	29,910	0,340	78,1	—2,00	76,1	80,0	71,2	11,3	7,35

General Mean 30,032 82,84

	Barometer.		Thermometer.	
	Inches.		°	
Greatest height during the year ...	30,305	Mean. Inches.	90,0	Mean. °
Least " " " ...	29,755	30,040	71,2	8,51
Extreme Difference ...	0,550	...	27,8	

TABLE VII.

Mean Height of the Barometer and Thermometer at Madras, from Table VI.

Year.	Barometer.	Thermometer.
	Inches.	°
1796 . . .	29,981	80,780
1797 . . .	29,948	83,430
1798 . . .	29,974	83,744
1799 . . .	29,988	81,430
1800 . . .	29,932	81,680
1801 . . .	29,936	81,354
1802 . . .	29,938	82,938
1803 . . .	30,006	82,371
1804 . . .	30,007	83,580
1805 . . .	30,007	82,046
1806 . . .	29,966	81,765
1807 . . .	29,923	79,738
1813 . . .	29,831	82,055
1814 . . .	29,891	81,304
1815 . . .	29,919	81,313
1816 . . .	29,972	80,434
1817 . . .	29,969	81,659
1818 . . .	29,959	81,088
1819 . . .	29,949	81,506
1820 . . .	29,950	81,546
1821 . . .	30,035	82,330
General Mean	29,964	81,760

TABLE VIII.

MEAN MONTHLY HEIGHT of the BAROMETER and THERMOMETER for 21 Years, between 1796 and 1821; with the HEIGHT of the HYGROMETER and also the MEAN FALL of RAIN.

Months.	Mean Height for 21 Years between 1796 and 1821.		Hygrometer between 1819 and 1823.	Mean Fall of Rain for 13 Years, between 1803 and 1821.	
	Barometer.	Thermometer.		Including the whole fall during Storms.	Fall in Storms reduced to the Mean fall.
	Inches.	°	Dry.	Inches.	Inches.
January . . .	30,085	75,108	13,0	0,008	0,008
February . . .	30,076	77,157	17,5	0,127	0,127
March . . .	30,041	79,920	17,5	0,528	0,528
April	29,955	82,417	18,0	0,384	0,384
May	29,851	80,918	20,9	1,413	0,121
June	29,861	88,159	28,9	0,746	0,746
July	29,867	85,645	28,0	3,303	3,303
August . . .	29,879	84,732	18,8	3,552	3,552
September . . .	29,908	83,825	15,5	4,824	4,824
October . . .	29,942	81,858	17,6	11,294	11,294
November . . .	29,956	78,672	7,9	14,803	14,803
December . . .	30,074	78,848	18,2	8,618	6,048
Mean . .	29,958	81,032	18,5	50,124	46,348

TABLE IX.

Fall of Rain at the Manor Observatory in 18 Years, with the Mean Fall during that period.

Years.	1803	1804	1805	1806	1807	1813	1814	1815	1816	1817	1818	1819	1820	1821	1822	1823	1824	1825	Total Monthly Falls during 18 years.	Average of each month in 18 years.
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
January	..	..	2,205	0,43	..	..	..	1,60	0,1	0,55	..	..	..	3,0	1,97	1,15	1,27	0,17	13,275	0,737
February	..	1,05	..	..	..	..	..	..	0,755	..	..	..	..	..	..	..	..	..	1,775	0,098
March	..	0,0375	..	..	..	0,425	..	..	..	..	..	..	0,75	0,32	..	0,25	..	..	8,4275	0,468
April	..	..	..	..	0,075	..	..	..	..	..	0,90	2,5	0,5	1,7	0,82	..	..	..	5,995	0,333
May	..	..	4,44	..	1,709	0,275	..	..	0,2	0,175	..	..	17,17	..	..	0,27	..	4,25	24,369	1,354
June	1,8025	0,0925	1,895	..	..	0,7	..	..	0,45	0,175	0,75	0,125	0,05	2,1	1,25	2,25	..	1,27	15,079	0,854
July	1,59	0,7475	2,035	3,55	1,391	1,25	1,8	6,475	4,05	1,775	12,05	0,8	3,59	1,3	0,55	2,27	0,25	3,07	50,0625	2,945
August	0,8025	0,1475	2,49	14,2225	1,808	0,925	4,925	..	0,875	0,475	0,8	1,3	3,17	3,17	0,7	3,15	0,65	7,07	60,6025	3,893
September	7,09	1,525	0,48	1,55	2,299	0,225	0,45	2,05	0,5	7,3	5,8	5,9	1,7	7,1	2,27	4,8	0,47	3,5	76,286	4,349
October	11,2975	12,41	6,46	10,9	3,795	5,1	7,1	0,25	6,925	10,5	17,9	2,8	12,29	15,02	10,52	10,4	14,05	17,47	220,2975	12,278
November	20,425	5,205	6,18	7,20	..	20,75	6,0	10,125	12,225	14,725	25,0	10,8	4,5	11,25	15,27	6,9	10,27	11,00	250,9650	13,937
December	11,025	5,39	4,09	3,7	12,09	2,075	3,7	4,8	4,45	0,25	7,75	6,7	19,7	4,75	3,27	6,3	3,95	7,25	135,469	7,526
Total of each year	66,1925	31,1165	31,2750	51,8225	24,2250	65,0300	30,2750	25,3000	33,2750	33,7250	77,0000	27,8250	70,1400	47,1150	36,8400	39,0100	33,2750	55,94	877,0410	48,723

Of the LONGITUDE of MADRAS in the EAST INDIES,

AS DEDUCED

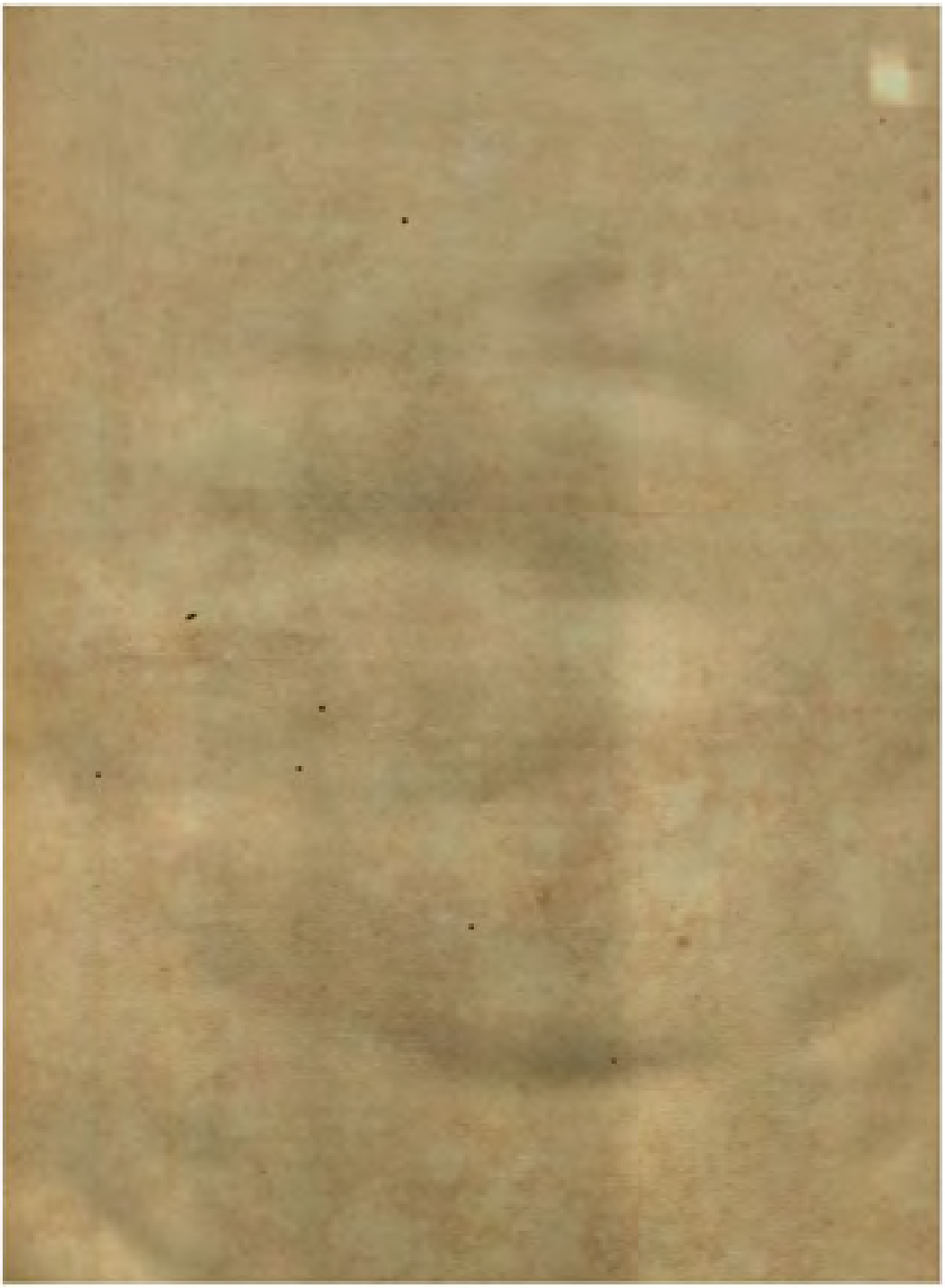
From Observations of the Eclipses of the First and Second Satellites of Jupiter,

TAKEN BETWEEN THE YEARS 1817 AND 1826.

BY

JOHN GOLDINGHAM, Esq.

F. R. S.



Of the LONGITUDE *of* MADRAS *in the* EAST INDIES, *&c.*

In the Second Volume of the Memoirs of the Astronomical Society, which has lately been received from England, I find a Paper containing Astronomical Observations by *Colonel Beaufoy*, F. R. S.; among these are numerous Eclipses of the Satellites of Jupiter—the Greenwich and Nautical Almanac Times being given, as well as the Times observed by *Colonel Beaufoy* at Bushy Heath, and the differences of the Tables found: to these we have some Correspondent Eclipses, taken at the Madras Observatory; as well as others observed near the Times of many of these in *Colonel Beaufoy's* Tables; so that the difference to be allowed to the Longitude deduced immediately from the Nautical Almanac may be readily found.

In the Philosophical Transactions is a Paper of mine upon the Geographical situation of the three Presidencies, Bengal, Madras, and Bombay, which was read at the Royal Society in June 1802.—The Longitude of Madras, upon which the Longitudes of the other Presidencies are founded, having been deduced from Eclipses of the Satellites of Jupiter, observed between the years 1787 and 1818: During this interval, some Correspondent Observations were taken at Greenwich, from which a Result was obtained; and the difference of the Tables was found by other Greenwich Observations, suited to the purpose; and allowed for: and the Longitude of Madras deduced by combining all the Observations.

I have now observed the same method with the Eclipses of the Satellites from 1817 to 1828; including the Corrections upon the Observations in *Colonel Beaufoy's* Tables—as this however, only extends to December 1818, I have had recourse for the remaining Corrections, and for such Corresponding sights as have been taken, to the Eclipses by the same Observer, published in the "*Annals of Philosophy*". The Observations being very numerous, I have pursued the same course in obtaining the Result as in the former situation; that is, the Mean of the whole of the Results by the Immersions of the first Satellite was taken, and any that differed much more than thirty seconds from that Mean were rejected—the same rule was adopted with the Emersions of the first and the Immersions and Emersions of the second Satellites. The differences of the Results however, particularly those by the first Satellite, were not much of importance however, where great accuracy was required.—I have not noticed the Eclipses of the third Satellite in these deductions.

The first Table contains the Eclipses of the first and second Satellites taken at the Observatory between June 1817 and the beginning of 1828, and used in these deductions.

The second Table contains the Correspondent Observations, and Results; And the third Table gives the Longitude, by applying the Corrections, to the computed Times in the Nautical Almanac; and also the Results.

From these it appears—That the Correspondent Observations (the Mean of Immersions and Emersions) give the Longitude of the Madras Observatory 5ʰ 21′ 9″,3 or 80° 17′ 19″.

That the Longitude, by allowing for the difference in the Tables is 5ʰ 21′ 9″,7 or 80° 17′ 25″. And the Mean of both

is 5ʰ 21′ 9″ or 80° 17′ 15′ East of *Greenwich*. By turning to the Result of the Observations from 1787 to 1838 as given in the Philosophical Transactions, it will appear, that the Mean Longitude by all the Observations there used in the deductions, is 5ʰ 21′ 9″,6 or 80° 17′ 21′ E.

So near an agreement cannot but be considered accidental; but the Results, as it will doubtless be thought, shew that the Longitude thus obtained by the Eclipses of the Satellites of Jupiter, may be very safely relied upon.

The above is the Longitude of the Madras Observatory, the Church of Fort St. George being 0′ 21′ East of the Observatory.—The Longitude of the Church is therefore 80° 18′ 30′ East.

28*d* September, 1839.

TABLE I.

Eclipses of the First and Second Satellites of Jupiter, taken at the Madras Observatory from the middle of the year 1817 to the beginning of 1826.

Date.		Eclipse.	Mean Time at Madras.			Remarks.
			h.	′	″	
1817 June	13	Em. 1	9	34	27,88	Planet high, but flying clouds: Observation good.
	27	Em. 1	13	24	23,30	Planet low, but clear: Observation good.
	29	Em. 1	7	15	21,85	Planet sufficiently high.
1818 March	25	Im. 1	13	20	20,73	Planet very low, but clear: Observation good.
April	12	Im. 1	17	10	30,88	Planet high and clear—twilight—Observation otherwise good.
May	22	Em. 1	15	31	39,45	Planet near the Zenith: ☽ up and near ♃: somewhat hazy.
	24	Em. 1	10	10	15,77	Planet very low, but clear: Observation good.
	31	Em. 1	18	4	24,04	Planet high, but rather hazy: Observation otherwise good.
1819 June	15	Em. 1	15	27	8,87	Planet sufficiently high and clear—Observation good.
	26	Em. 1	15	23	30,90	Planet near the Zenith and clear—Observation good.
	29	Em. 1	11	10	34,42	Planet high, but hid at times by clouds: Observation not very satisfactory.
1820 August	3	Im. 2	15	10	23,33	Planet near the Zenith—clear: Observation good.
September	14	Em. 1	9	13	41,00	Planet near the Zenith—clear: Observation good.
	25	Em. 1	8	10	40,85	Planet high—flying clouds: Observation otherwise good.
	30	Em. 1	7	14	3,0	Planet hazy—☽ up: Observation otherwise good.
October	9	Em. 1	10	47	21,29	Planet sufficiently high, and clear: Observation good.
	11	Em. 1	7	13	38,3	Planet sufficiently high, and clear: Observation good.
	21	Em. 1	11	7	26,51	Planet high and clear—Moonlight: Observation good.
November	10	Em. 1	9	15	10,15	Planet high and clear: Observation good.
1821 August	10	Im. 1	17	10	13,34	Planet very high, and somewhat hazy: the ☽ up and near—twilight—Observation otherwise good.
September	9	Im. 1	10	5	20,34	Planet low, and somewhat hazy—Moonlight: Observation otherwise good.
	10	Im. 1	13	18	43,08	Planet in the Zenith—Moonlight, and somewhat hazy: Observation otherwise good.
October	7	Im. 1	15	10	41,17	Planet high: flying clouds: Observation not very satisfactory.
	12	Im. 1	14	10	30,0	Planet high and clear—Moonlight: Observation good.
	14	Im. 1	8	34	13,98	Planet low, but very clear—the ☽ just rising and not very far from the Planet.
November	11	Em. 1	7	23	23,3	Planet high and clear: Observation good.
	18	Em. 2	10	11	37,8	Planet on the Meridian—clear, but cheery dew: Observation otherwise good.
	20	Em. 1	14	10	10,27	Planet low but clear: dew: Observation good.
	22	Em. 1	9	11	34,31	Planet near the Zenith—clear—Observation good.
December	8	Em. 1	7	30	15,72	Planet near the Zenith, and [illegible] with haze—Observation not satisfactory.
1822 January	15	Em. 2	7	5	3,9	Planet high and clear—Observation good.
	16	Em. 1	8	13	4,1	Planet near the Zenith—twilight—clear—Observation good.
March	3	Em. 1	6	48	1,9	Planet high and clear—twilight—Observation good.
December	5	Em. 1	7	7	47,2	Planet high and clear: Observation good.
1823 January	11	Em. 2	9	33	8,9	Planet very high: Observation satisfactory.
	18	Em. 1	8	33	17,4	Planet somewhat cloudy, but Moonlight: Observation good.
February	20	Em. 2	6	28	28,5	Planet in the Zenith: flying clouds at the time & twilight: Observation otherwise good.
	27	Em. 1	8	13	19	Planet high and clear: Observation good.
April	30	Em. 1	7	5	21,2	Planet low & rather hazy—twilight—& the Satellite close to the body of the Planet.
August	19	Im. 1	17	10	13,6	Planet high and clear—the twilight just appearing—Observation good.
September	11	Im. 1	17	9	9,3	Planet high—but covered with a thin haze—twilight, and the Telescope not [illegible]—Observation of little value.
October	13	Im. 2	13	28	38,8	Planet sufficiently high and clear—Observation good.
	20	Im. 1	13	23	36,5	Planet high—full ☽—clear—dew: Observation good.

TABLE I, *continued.*

Date.		Eclipse.		Mean Time at Madras.			Remarks.
				h.	′	″	
1823 November	12	Im.	1	11	41	43,8	Planet near the Zenith—calm; clear; but much dew.
December	7	Im.	1	12	18	18,8	Planet high and clear—Observation satisfactory.
	14	Im.	1	12	12	23	Planet near the Zenith—bright Moonlight—Observation good.
1824 January	8	Em.	1	11	20	6,06	Planet very high and clear—Observation good.
	8	Em.	1	9	3	10,17	Planet high and clear—Observation good.
	23	Em.	1	12	58	34,99	Planet high—flying clouds—Observation otherwise good.
	24	Em.	1	7	21	30,04	Planet at a convenient altitude—clear—Observation good.
February	11	Em.	2	8	40	18,30	Planet near the Zenith—Moon near—flying clouds—Observation not satisfactory.
	12	Em.	2	11	17	24,39	Planet high and clear—Moonlight—Observation good.
March	14	Em.	1	8	20	19,40	Planet high—but the Moon up, and near the fall—Observation good.
	21	Em.	2	11	3	13,04	Planet rather low—but clear—Observation good.
April	2	Em.	1	8	5	3,77	Planet sufficiently high—but somewhat hazy—dark—Observation otherwise good.
	8	Em.	1	10	00	22,40	Planet low, but clear—Moonlight—Observation good.
	13	Em.	2	9	10	6,18	Planet sufficiently high and clear—Observation good.
September	23	Im.	1	10	48	30,47	Planet rather low—twilight appearing—clear—Observation satisfactory.
	24	Im.	2	10	28	28,04	Planet low but clear—twilight appearing—Observation otherwise good.
October	31	Im.	1	13	6	30,14	Planet high, but flying clouds—Observation otherwise good.
November	7	Im.	1	17	00	1,13	Planet near the Zenith and clear—Observation good.
December	3	Im.	1	11	36	48,12	Planet low, but clear—bright Moonlight—Observation good.
	8	Im.	1	13	29	48,17	Planet high—☽ up and near ♈—clear—calm—Observation good.
	23	Im.	1	17	18	43,7	Planet high and clear—Observation good.
1825 January	8	Im.	1	11	21	55,13	Planet high and clear—☽ up—dew—Observation good.
	20	Im.	1	12	0	28,31	Planet at a convenient altitude—clear—some dew—Observation good.
	17	Im.	1	13	13	30,28	Planet very high—flying clouds—Observation otherwise good.
	24	Im.	2	12	39	48,17	Planet had just passed the Meridian—clear—Observation good.
	24	Im.	1	12	47	8,07	Planet high and clear—Observation good.
February	2	Em.	2	12	23	21,13	Planet high—clear—bright Moonlight—Observation good.
March	4	Em.	1	14	30	32,30	Planet low and in a thick haze—also Moonlight.
	8	Em.	2	7	18	10,19	Planet high and clear—Observation good.
	13	Em.	1	10	14	37,67	Planet very high and clear—Observation good.
	20	Em.	1	12	48	14,71	Planet low but clear—Observation good.
	22	Em.	1	9	12	38,70	Planet near the Zenith and clear—Observation good.
April	8	Em.	1	13	6	31,06	Planet at a convenient altitude and clear—Observation good.
	9	Em.	2	7	3	38,17	Planet in the Zenith and clear—but twilight—Observation otherwise good.
	18	Em.	2	8	40	46,80	Planet high, but somewhat hazy—Observation otherwise good.
	23	Em.	1	9	27	48,89	Planet high and clear—Observation good.
	28	Em.	1	11	20	18,81	Planet low, but clear—Moonlight—Observation good.
November	17	Im.	1	15	22	34,12	Planet high and clear—dew—Observation good.
	22	Im.	2	14	42	8,30	Planet low, but clear—dew—Moonlight—Observation otherwise good.
December	13	Im.	1	15	30	53,32	Planet high and clear—Observation good.
	24	Im.	2	11	18	17,88	Planet high and very clear—dew—Observation good.
	28	Im.	1	14	40	14,80	Planet high and very clear—the ☽ near the Meridian—Observation good.

TABLE II.

Correspondent Eclipses of the First and Second Satellites.

Date.	Satellites.	Immersion or Emersion.	Mean Time at Madras.			Mean Time at Greenwich.			Longitude of Madras.		
			h.	′	″	h.	′	″	h.	′	″
1820 September 29	2	Em.	13	22	6,63	9	11	11	5	21	55,69
1821 August 28	1	Im.	17	20	53,24	12	00	14	5	20	39,24
November 23	1	Em.	14	46	58,47	9	25	56	5	21	60,47
1822 August 30	1	Im.	17	21	15,00	11	59	40	5	21	36
November 27	1	Em.	13	18	51,8	9	55	36	5	21	15,8
23	1	Em.	14	50	56,6	9	30	10	5	20	46,6
1823 October 2	2	Im.	17	23	18	11	52	28	5	20	44
1824 January 6	1	Im.	14	35	0,9	9	54	08	5	21	01
1825 January 8	1	Em.	18	31	55,12	10	20	27	5	21	18,12
March 4	1	Em.	14	20	39,30	9	9	10	5	21	22,30
20	1	Em.	7	46	13,75	7	27	11	5	21	03,75

RESULTS.

Immersions.			Emersions.		
h.	′	″	h.	′	″
5	20	39,2	5	21	51,7
5	21	38	5	22	03,3
5	20	44	5	21	18,8
5	21	04	5	20	40,5
5	22	18,1	5	21	18,2
Mean 5	21	4,1	5	22	03,8
			Mean 5	21	14,4

	h.	′	″
By the Immersions . .	5	21	4,1
Emersions . .	5	21	14,4
Mean	5	21	8,2 East of Greenwich.

TABLE III.

Longitudes by allowing for the Deviations of the Watch.

Date.	Eclipse.	Mean Time at Madras.	Mean Time by the Nautical Almanac.	Longitude.	Difference of Comp. Tables.	Corrected Longitude.
		h. ′ ″	h. ′ ″	h. ′ ″	′ ″	h. ′ ″
1817 June 19	Em. 1	9 24 37,50	8 53 31	5 31 5,50	+ 0 10	5 31 15,5
27	Im. 1	13 58 43,50	13 8 11	5 31 32,50	+ 0 10	5 31 37,5
30	Em. 1	7 48 42,25	7 21 0	5 32 42,25	+ 0 10	5 31 37,5
1818 March 20	Im. 1	13 59 34,75	13 8 31	5 31 33,75	+ 0 10	5 31 43,75
April 12	Im. 1	17 18 21,62	17 13 30	5 30 51,62	+ 0 10	5 31 1,62
May 22	Im. 1	13 41 21,25	13 10 45	5 30 36,25	+ 0 10	5 31 16,25
31	Im. 1	13 10 11,75	13 40 11	5 31 0,75	+ 0 10	5 31 10,75
31	Im. 1	17 4 21,50	16 43 15	5 31 6,50	+ 0 10	5 31 16
1818 June 18	Em. 1	11 27 0,00	10 56 0	5 31 0,00	— 0 1	5 31 1,0
20	Im. 1	13 24 21,25	12 53 28	5 30 53,25	— 0 1	5 30 52,2
23	Im. 1	11 52 34,25	11 22 11	5 30 23,25	— 0 1	5 30 22,2
September 14	Em. 1	7 17 31,00	6 47 4	5 30 27,00	+ 0 10	5 30 37,0
30	Em. 1	7 24 7,5	6 53 30	5 30 37,50	+ 0 10	5 30 47,5
1819 August 7	Im. 1	14 52 55,75	14 22 3	5 30 52,75	— 0 11	5 30 41,8
October 6	Em. 1	12 47 31,25	12 17 33	5 29 58,25	+ 0 1	5 29 59,3
21	Em. 1	7 14 35,5	6 44 17	5 30 18,50	+ 0 1	5 30 19,5
21	Em. 1	11 7 35,25	10 37 11	5 30 24,25	+ 0 1	5 30 25,3
November 20	Em. 1	9 28 16,12	8 57 50	5 30 26,12	+ 0 1	5 30 27,1
1820 August 12	Im. 1	17 29 12,50	17 28 48	5 30 24,50	— 0 10	5 30 13,5
September 7	Em. 1	10 53 33,25	10 24 30	5 29 3,25	+ 0 1	5 29 4,3
19	Im. 1	13 15 31,00	12 45 26	5 30 5,00	+ 0 1	5 30 6,0
October 7	Em. 1	11 38 47,25	11 9 32	5 29 15,25	+ 0 1	5 29 16,3
17	Im. 1	13 6 52,0	12 37 39	5 29 13,0	+ 0 1	5 29 14,0
11	Em. 1	9 33 13,50	9 3 12	5 30 1,50	+ 0 1	5 30 2,5
November 11	Em. 1	7 52 53,12	7 23 50	5 29 3,12	+ 0 1	5 29 4,1
25	Em. 1	11 46 11,87	11 16 32	5 29 39,87	+ 0 1	5 29 40,9
25	Em. 1	9 15 10,50	8 44 31	5 30 39,50	— 0 1	5 30 38,5
December 9	Em. 1	7 31 14,50	7 1 3	5 30 11,50	— 0 11	5 30 0,5
1821 January 14	Em. 1	7 8 3,0	6 37 35	5 30 28,0	+ 0 11	5 30 39,0
14	Em. 1	6 22 45	5 52 35	5 30 10,0	— 0 11	5 29 59
March 1	Em. 1	8 45 1,0	8 15 11	5 29 50,0	— 0 11	5 29 39,0
December 8	Em. 1	7 7 47,0	6 37 35	5 30 12,0	— 0 11	5 30 1,0
1822 January 13	Em. 1	8 11 1,2	7 40 35	5 30 26,2	— 0 11	5 30 15,2
13	Em. 1	7 35 11,50	7 4 35	5 30 36,50	— 0 11	5 30 25,5
February 10	Em. 1	6 39 28,5	6 10 20	5 29 8,5	+ 0 11	5 29 19,5
27	Em. 1	8 13 19	7 43 31	5 29 48	— 0 11	5 29 37
April 20	Em. 1	7 3 38,5	6 33 39	5 29 59,5	+ 0 11	5 30 10,5
August 19	Im. 1	17 19 13,5	17 28 30	5 30 43,5	+ 0 11	5 30 54,5
September 11	Im. 1	17 3 8,5	16 32 38	5 30 30,5	+ 0 11	5 30 41,5
October 11	Im. 1	13 20 53,0	12 50 25	5 30 28,0	+ 0 11	5 30 39,0
26	Im. 1	13 23 30,5	12 53 13	5 30 17,5	+ 0 11	5 30 28,5
November 11	Im. 1	11 31 41,5	11 1 38	5 30 3,5	+ 0 11	5 30 14,5
December 7	Im. 1	13 15 14,0	12 45 0	5 30 14,0	+ 0 11	5 30 25,0

The Results marked ✱ are rejected, although they agree very well with those by the other Eclipses; the Corrections being large found by comparison with Observations taken by Colonel Beaufoy seven and eight weeks distant; an interval which may probably be considered too great for the purpose in view.

TABLE III, continued.

Date.	Eclipse.	Mean Time at Madras.	Mean Time by the Nautical Almanac.	Longitude.	Difference of Comp. Time.	Corrected Longitude.
		h. ′ ″	h. ′ ″	h. ′ ″	′ ″	h. ′ ″
1823 December 14	Im. 2	12 18 23	0 11 11	5 51 10	+ 0 11	5 51 53
1824 January 6	Em. 1	14 50 0,50	8 14 16	5 51 44,50	+ 0 6	5 51 50
8	Em. 1	8 3 55,17	7 37 10	5 51 45,17	+ 0 5	5 51 50,5
21	Em. 1	22 15 34,50	7 51 7	5 50 27,50	— 0 4	5 50 30
24	Em. 1	7 23 30,34	7 37 45	5 50 45,34	— 0 4	5 50 49,0
February 11	Em. 2	8 49 18,00	8 28 40	5 51 38,0	+ 0 14	5 51 52,0
18	Em. 2	11 17 33,30	8 16 9	5 51 24,30	+ 0 12	5 51 36,3
March 14	Em. 2	8 25 15,10	7 8 37	5 50 42,40	+ 0 14	5 50 57,1
31	Em. 2	11 8 18,04	8 23 14	5 51 1,4	+ 0 13	5 51 16,4
April 1	Em. 1	9 3 2,77	8 45 7	5 50 10,77	+ 0 8	5 50 18,8
7	Em. 1	23 50 23,33	4 39 37	5 50 45,33	+ 0 10	5 50 55,3
15	Em. 2	8 10 6,10	7 49 3	5 51 3,10	+ 0 11	5 51 14,1
September 23	Im. 1	16 23 33,37	11 21 21	5 52 12,37	— 0 23	5 51 48,4
23	Im. 2	16 39 15,31	11 37 37	5 51 38,31	— 0 23	5 51 15,0
October 21	Im. 1	13 . 0 45,00	7 41 24	5 51 21,00	— 0 10	5 51 7,7
November 7	Im. 1	17 [illegible] 5,13	11 [illegible] 31	5 51 35,13	— 0 13	5 51 37,1
December 7	Im. 1	11 [illegible] 46,13	5 15 15	5 51 37,13	— 0 9	5 51 53,1
8	Im. 1	23 23 36,17	6 8 23	5 51 13,17	— 0 9	5 51 37,1
22	Im. 1	17 10 49,5	11 33 0	5 51 35,5	— 0 8	5 51 53,7
1825 January 5	Im. 1	15 23 40,33	10 17 20	5 51 35,13	— 0 8	5 51 53,1
19	Im. 1	12 0 28,33	6 26 11	5 51 37,33	— 0 8	5 51 53,3
19	Im. 2	11 23 31,33	6 20 11	5 51 [illegible],3	— 0 8	5 51 53,3
31	Em. 2	13 23 49,17	7 39 18	5 50 31,17	— 0 7	5 50 53,9
31	Em. 2	13 47 8,67	8 03 39	5 50 [illegible],5	+ 0 10	5 50 53,5
February 1	Em. 1	11 53 31,13	7 8 10	5 50 21,13	+ 0 12	5 50 33,3
March 4	Em. 2	14 30 51,51	8 9 45	5 51 [illegible],5	+ 0 13	5 51 35,3
6	Em. 2	7 16 10,19	1 43 31	5 50 [illegible],1	— 0 5	5 50 41,9
13	Em. 1	10 13 37,37	1 38 45	5 51 [illegible],37	— 0 10,5	5 51 35,1
23	Em. 1	18 48 14,75	7 17 11	5 50 [illegible],75	+ 0 11	5 51 7,7
30	Em. 2	6 32 34,75	2 10 21	5 51 47,75	+ 0 13	5 52 0,9
April 1	Em. 1	11 0 [illegible],00	5 45 42	5 50 [illegible],00	+ 0 8	5 50 47,1
9	Em. 2	9 3 26,17	3 43 41	5 50 [illegible],17	— 0 5	5 50 43,8
18	Em. 2	9 10 41,1	3 19 40	5 51 17,1	+ 0 11	5 52 28,1
21	Em. 1	9 17 41,50	3 4 18	5 50 17,5	+ 0 10	5 51 7,9
29	Em. 2	13 29 18,0	3 23 24	5 55 [illegible],00	+ 0 10	5 51 31,0
November 10	Im. 2	14 22 31,38	11 1 30	5 51 [illegible],13	— 0 14	5 50 49,1
22	Im. 2	14 23 [illegible],7	9 02 30	5 51 [illegible],3	— 0 12	5 51 33,8
December 10	Im. 2	13 29 [illegible],32	11 9 27	5 51 [illegible],32	— 0 11	5 51 7,3
24	Im. 2	13 18 [illegible],06	8 12 00	5 [illegible] [illegible],06	— 0 9	5 51 49,7
25	Im. 1	11 49 [illegible],09	9 03 40	5 51 [illegible],09	— 0 11	5 51 33,9

Results by applying the Difference of the Tables, of the First and Second Satellites.

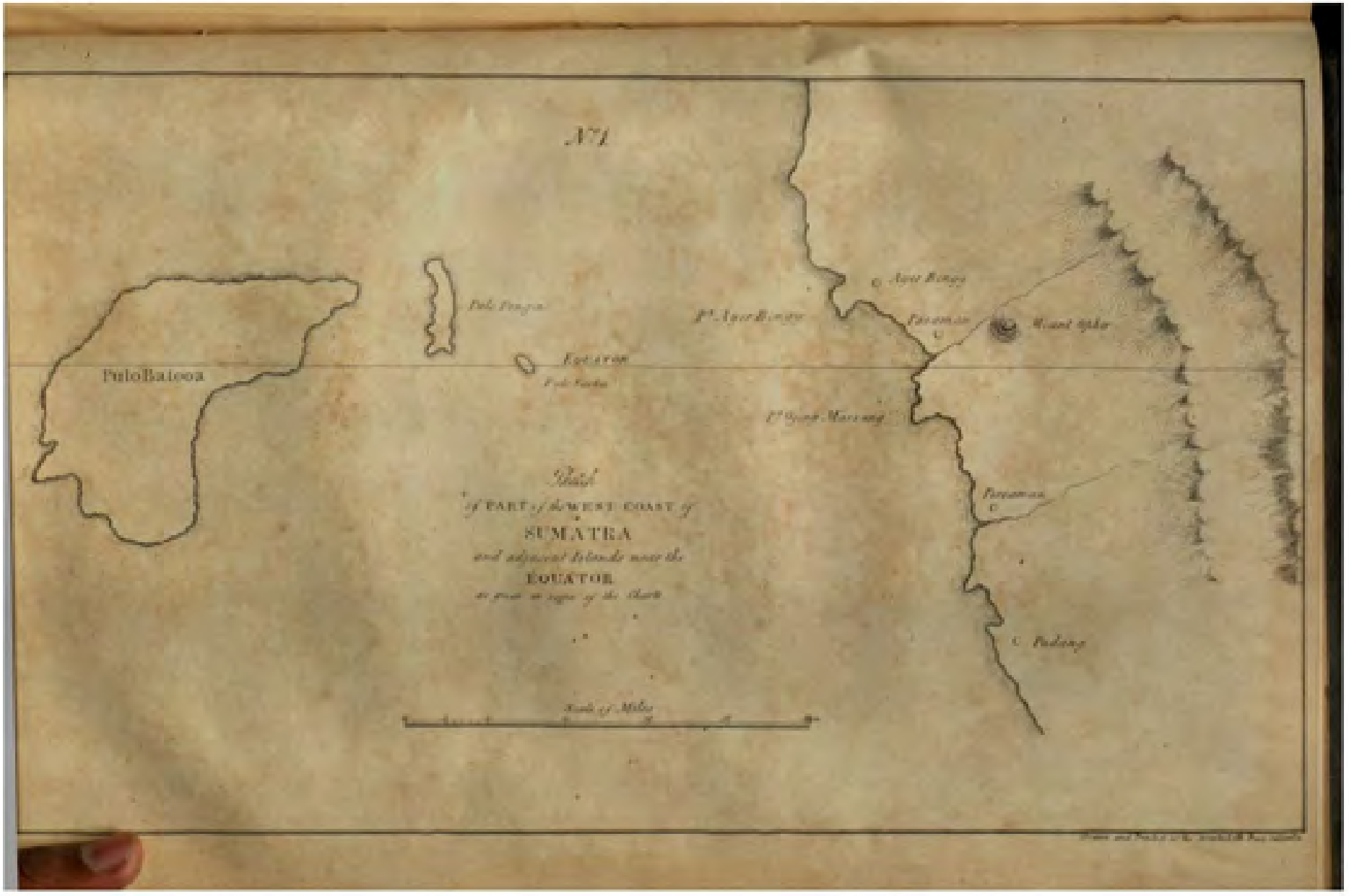
Immersions.				Emersions.		
h.	′	″		h.	′	″
3	21	8,3		3	21	11,9
	20	15,7			21	18,3
	21	30,0			21	31,6
	21	1,7			21	2,6
	21	11,9			21	5,0
	20	28,4			20	5,3
	20	29,2			20	38,1
	21	4,8			21	3,6
	21	12,2			21	0,4
	21	14,1			21	2,5
	21	36,0			21	2,1
	21	5,6			20	40,9
	21	26,8			20	41,2
	21	11,7			21	10,3
	20	36,5			20	45,0
	20	37,5			21	11,3
	21	25,0			20	40,3
	20	49,1			20	39,4
	21	21,6			21	38,1
	21	7,7			20	37
	21	17,1			21	17,0
	21	23,1			21	8,6
	21	27,2			20	30,0
	21	32,7			20	42,9
	21	28,1			21	33,4
	21	28,2			20	37,1
	20	31,2			21	18,4
	20	39,1			21	3,8
	20	40,1			20	33,4
	21	30,2			21	18,5
	21	7,2			21	18,3
	21	40,7			20	41,9
	21	13,6			21	39,4
					21	7,7
					20	37,0
					20	40,2
					21	28,4
					21	7,8
					21	10,6
Mean. 3	21	15,67		3	21	8,7 Mean.

	h.	′	″
By the Immersions	3	21	15,67
By the Emersions	3	21	8,7
Mean of both	3	21	8,7

J. GOLDINGHAM.

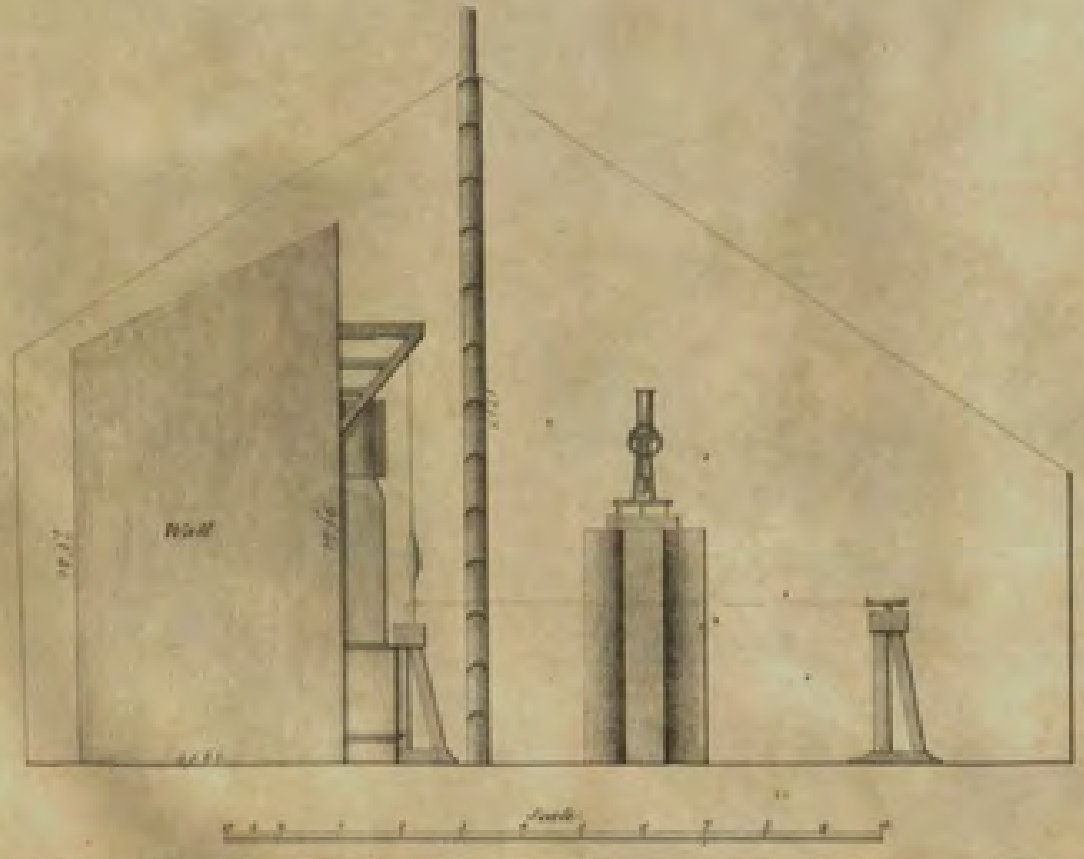
The Results by four Immersions, and four Emersions, differing considerably more than 30 seconds of time from the Mean of all the Observations, have been rejected. The Mean of all the Observations was 3h 21′ 11″,8.

Note.——It is known to those who have had much practice in observing Eclipses of the Satellites, that such Observations with Telescopes even of the same Power, and intended by the Instrument Maker to have been in every respect alike, often give different Results—Telescopes of different Powers agreeing still less—it is also known, that the Eyes of different Observers seldom correspond—and that it becomes necessary in consequence, where accuracy is expected, to observe both Immersions as well as Emersions, without change of Observers or Telescopes throughout the Series; when such sources of difference are counterbalanced in the Mean: Correspondent Observations are of course the most to be relied upon; and the next in value, are Eclipses, when the differences of a Telescope from the Tables can be found by sights taken near the time: This method has been adopted in Table 3, as regards Colonel Beauley's Telescope; and the Observations being very numerous (Immersions as well as Emersions), the differences found from Eclipses taken sometimes before and sometimes after the time when the Madras Eclipses were observed, a result which may be relied upon with some confidence has been obtained: If the same method were pursued with the Correspondent Observations, the Results would be the same as by the usual method. For example—August 18th, 1821, the difference from the Nautical Almanac, according to Colonel Beauley's Table is −25″; the Time, at Madras is 17h 29′ 53″,5—by the Nautical Almanac 11h 35′ 48″—the Longitude by the Tables is therefore 5h 21′ 5″,5, from which take the above difference 25″, and we have the corrected Longitude 5h 22′ 30″,8; the same as in the Table of Results by Correspondent Eclipses. I understand that the Mean Result of the Emersions and Immersions deduced immediately from the Tables in the Nautical Almanac is very nearly the same as that deduced in this Paper—a degree of accuracy, seldom (or never so far as I recollect) arrived at formerly by direct comparison with the Tables.

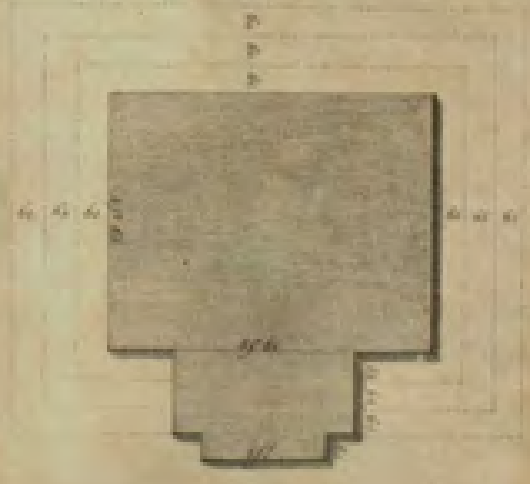

N°1
Pulo Batooa
Pulo Pongin
Equator
Pt. Ayer Bingy
Ayer Bingy
Pt. Ojong Marsang
Pereaman
Padang
Sketch
of PART of the WEST COAST of
SUMATRA
and adjacent Islands near the
EQUATOR
as given in copy of the Chart
Scale of Miles

No. 2

Canvas Observatory

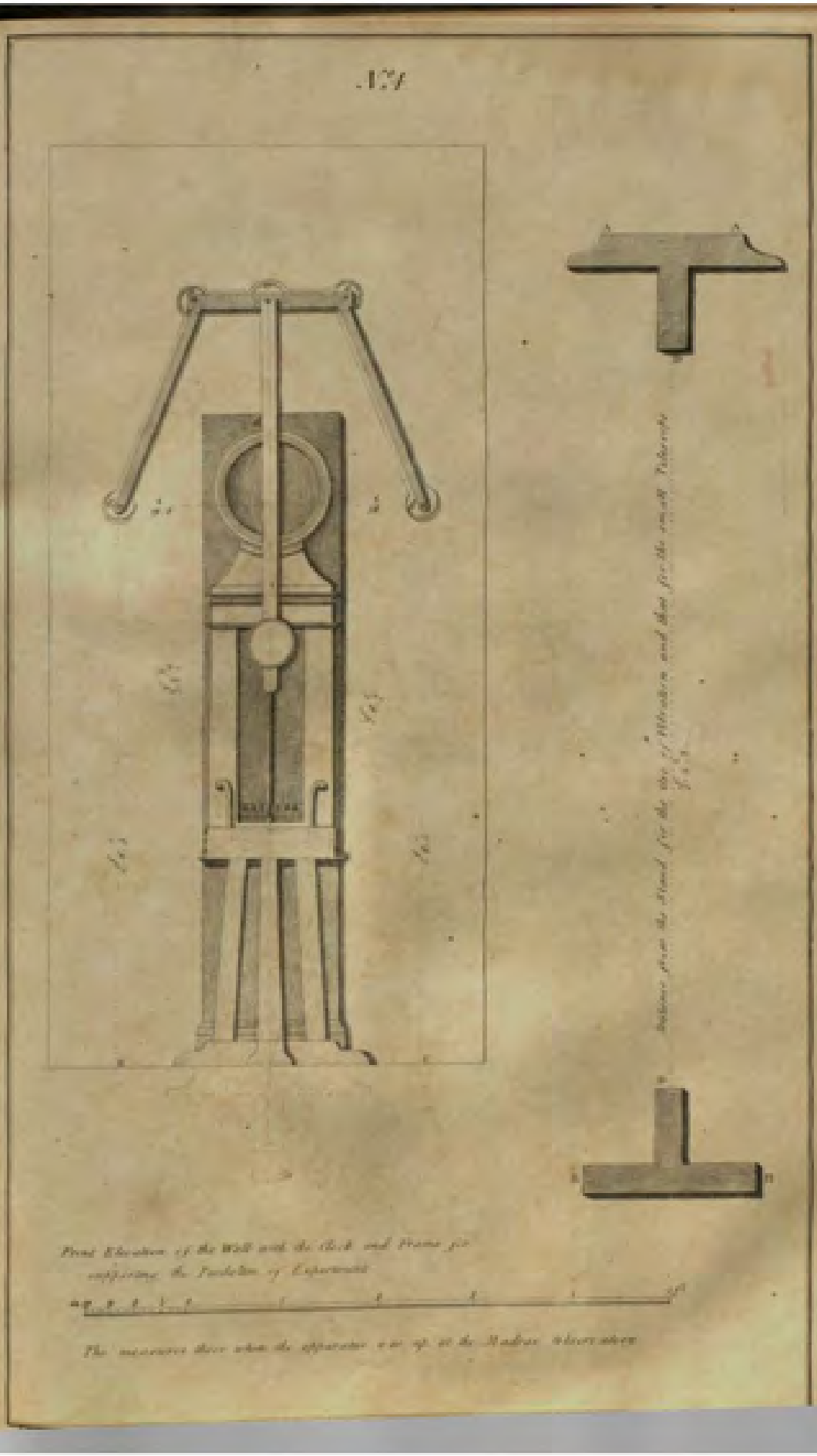


Plan of the Wall



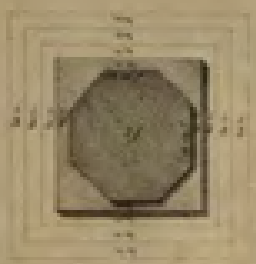
.175

Plan
of the
OBSERVATORY

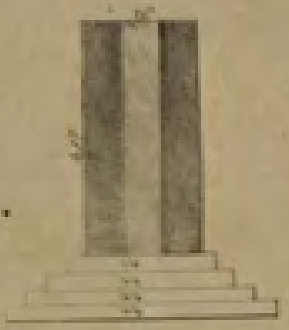

Print Elevation of the Wall with the Clock and Frame for supporting the Pendulum of Experiment
The measures there when the apparatus was up at the Madras observatory

No. 6

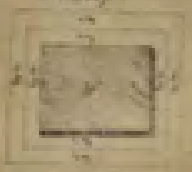
Plan



Pillar
for the Transit Instrument



Foundation for the support of the small Telescope



No. 5

Plank for the Clock

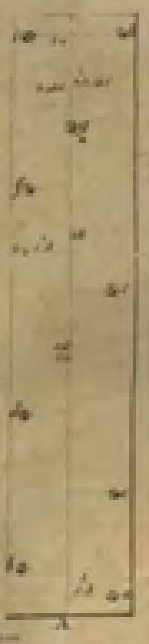
Dimensions

	f. in.
Length	6. 7
Breadth	1. 4
Thickness	0. 2½

Screws marked with Letters are for fixing the Plank to the Wall

	f. in.
A to a, in the Line	6. 8
b,	0. 0. 3
c,	0. 3. 1
d,	2. 5
e,	3. 7
f,	4. 8
g,	5. 4
h,	6. 3. 2
i,	0. 3. 5

Upper



Bottom

Screw holes in the Clock Case marked with figures; in these holes Screws are to be inserted for fixing the Case to the Plank.

	f. in.
A to [illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Longitude East of Madras Observatory
PLAN
Showing the Positions of Remarkable
Peaks and Mountains
as seen from
BENCOOLEN
with part of the Coast of
SUMATRA
Laid down by Triangles
Scale of 1 Mile to an Inch
N°7
High North Peak
Eye Peak
Sugar Loaf Hill
Survey
of the Rat Island near
Bencoolen
Padally Point or Sunyeen
Marlborough Point
Rat Island
Buffalo Point
Longitude
East of

A
Sketch
of
TAPPANOOLY BAY
and the
Mansillar Islands
Mansillar Islands
Tappanooly Bay

No. 9
Plan
of the
West Coast of
SUMATRA
Longitude
East
Greenwich
Madras
Observatory

N°10

Plan of the Island of GAUNSAH LOUT

on which the Experiments for ascertaining the Length of the Pendulum were made.

Latitude 0° 33' 0" S.
Longitude 98° 45' E.

Remarks: The Island is low and very flat, and is about 3 feet above Low Water mark. The outer Boundary shows the Surface Low Water and the other is where the Surf washes at the Full, which is 4 feet.

References:
A. Situation of the Pillar to which were secured the Clock and Pendulum Apparatus.
B. Well of Fresh Water 7 feet in depth and close for the convenience of the Boats.
C. Red Spot where the Observations for the Latitude were taken.
D. Bearing N° W. & distance 270 feet from the Pillar A to the Sea Side.

0 50 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500 2600 2700 2800 2900 3000 3100 3200 3300 3400 3500 3600 3700 3800 3900 4000

N° II
View of the Island
of
Gannanh Lout

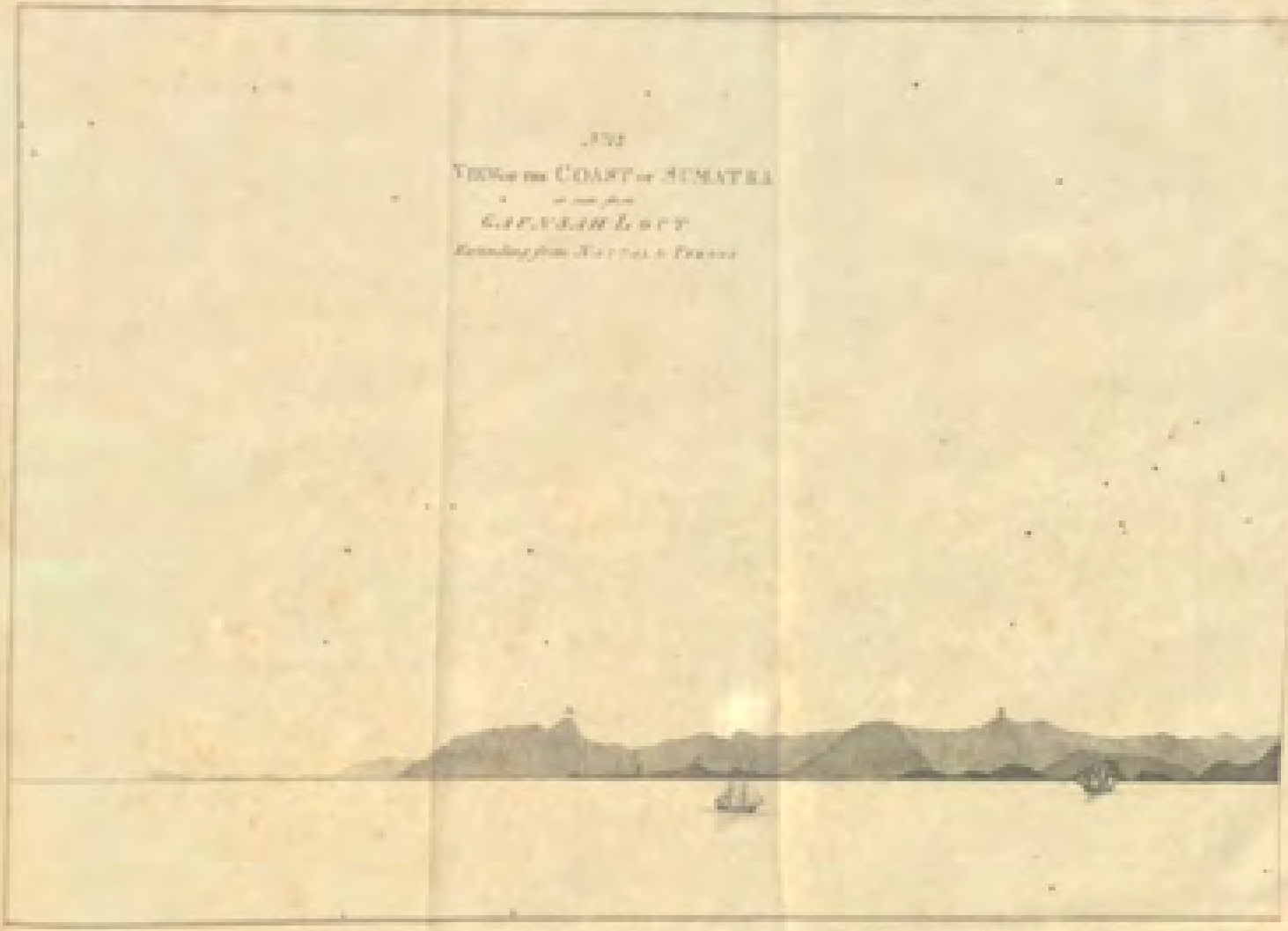
No. 1

VIEW of the COAST of SUMATRA

as seen from

CAUNSAH LOUT

Extending from NATUNA to PERNAS



No. 2

VIEW OF THE COAST OF SUMATRA

as made from

CAYNSAH LOUT

Extending from NATTAL to TORONO

PULO PANJONG

VIEW OF MOUNT OPHIR, OR GOONUNG PASSAMAN BY THE NATIVES

as seen from

POOLOO PANJONG.

No. 15

VIEW

from the S.E. Point of

PULO PINNEE.

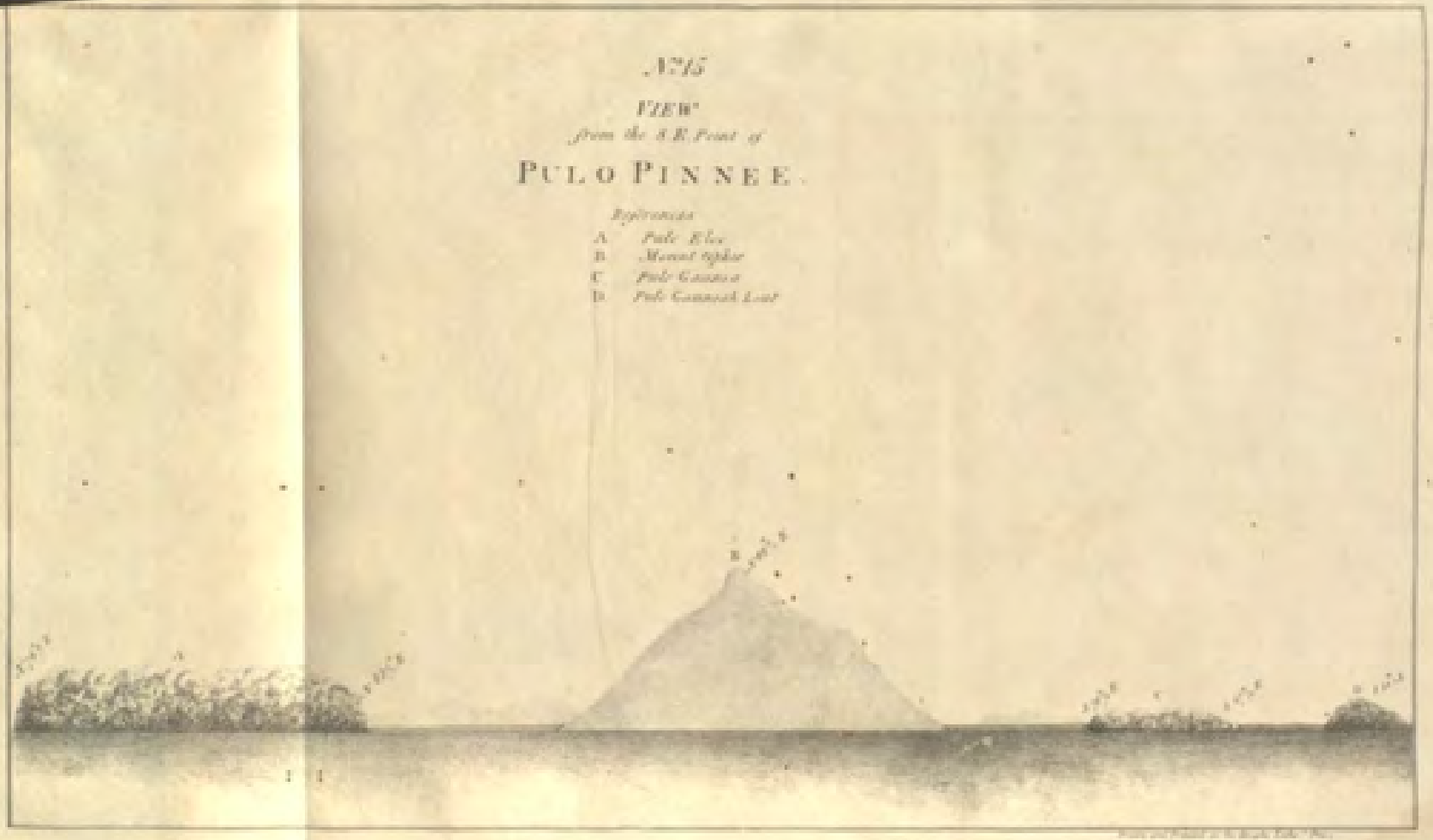
References

A. Pulo Elec

B. Mount Tiphar

C. Pulo Gaunea

D. Pulo Gaunoah Lout



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